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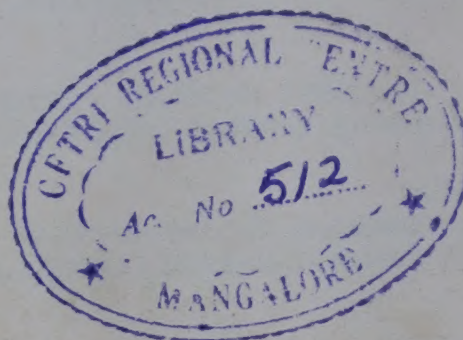
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DEDICATION

(continued from the previous edition)

... to Elijah Wendell Williams Cauley, who now has a name and is perfect in every respect.

ACKNOWLEDGMENTS

I had a lot of help with the second and third editions. My role shifted from that of principal author to one of technical oversight and approval. In short, others did the hard part, revising my earlier work to make it current. If this is a good edition, it is their doing. I am, however, ultimately responsible for the contents of this book, because my helpers quite properly refused to release anything until I had read and approved their modifications. If you like this book, congratulate them. If you find fault, it belongs to me. These people are:

Simon St. Laurent, whose technical patience with beta releases of Internet Explorer made Chapter 17 possible and whose technical edit of the entire book resulted in many improvements over the first edition.

Kathy Murray, who wrote Chapters 17 and 19 and the Appendices and who made many revisions to elevate the book far above the first edition, which was, necessarily, a treatment of a beta product.

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PREFACE

In August 1995, Microsoft released Windows 95 following an extended period of media hype, user anticipation, and an extensive year-and-a-half beta program that involved tens of thousands of beta testers throughout the world and resulted in many sneak-preview books, magazine articles, and exposés.

MIS:Press released the first edition of this book to correspond with the Windows 95 release, which means that, like all the others, I necessarily wrote the book from a beta copy of Windows 95, originally code-named "Chicago." Since then, we have seen many changes, not so much in how Windows 95 works as in how people view and use Windows 95 and in how they believe that Windows 95 (97, 99, 2001...) will work in the years to come. The second edition and now this third reflect those changes in attitude as well as the changes and additions to Windows 95 since August 1995.

Two significant industry phenomena reshaped Microsoft's focus with respect to Windows 95. First, the Internet and the World Wide Web achieved unforeseen overwhelming popularity; second, mainstream hardware power increased significantly.

Microsoft was caught short by the popularity of the Web, which seemed, to everyone else, to be passing Microsoft by. The company's initial emphasis on

the Microsoft Network (Chapter 16), a proprietary online service similar to CompuServe and America Online, treated the Internet and the Web as passing fancies. However, the overwhelming success of the Netscape Navigator Web browser program came as quite a surprise to Microsoft, which is never happy when someone else makes a lot of money in the computer software business. Characteristically, Microsoft hastened to catch up by developing and releasing Internet Explorer (Chapter 17), soon in its fourth version and the only serious competitor to Netscape Navigator. A major company reorganization and the publication of *The Road Ahead* by Bill Gates (or so the book jacket says) in 1996 reflected Microsoft's new emphasis on the Internet. All indications are that future versions of Windows 95 and Windows NT will include Internet Explorer technology as an integral part of the operating system.

The second major influence on Windows operating systems came from advances in hardware that occurred in the past few years. When Microsoft began to design and develop "Chicago," the mainstream computer was a 33-MHz 386 with 4 Mbytes of RAM, 100 MBytes of hard disk, and a 9600-baud modem. CD-ROMs and game-quality sound cards were plentiful but not preeminent. This configuration supported Windows 3.1 perfectly well, but Windows NT, Microsoft's 32-bit, protected-mode, portable operating system, did not install or run well, if at all, on such a machine. Microsoft targeted Windows 95 for the lower-end machines, which were in the mainstream, reserving NT for corporate power users.

By the time Windows 95 shipped, hardware power had increased substantially, and the mainstream computer was a Pentium 133 with 16 Mbytes of RAM, 1.2 Gbytes of hard disk, a quad-speed CD-ROM, Super VGA, high-quality sound, and a 28,800-baud modem. Just the kind of heavy iron that Windows NT WorkStation needs. Last year, Microsoft released Windows NT 4.0, which sports the Windows 95 user interface. The two operating systems' user interfaces are so similar now, that, with the exception of the chapter on the Control Panel, and by changing all the 95s to NTs, this book could well be titled, *teach yourself... Windows NT WorkStation 4.0*. Microsoft appears to be positioning Windows NT for large-scale corporate users and Windows 95 for the home user.

You are probably reading this book to get up to speed on Windows 95, either at home or at work. To repeat what the Preface to the first edition says: In writing this book, I do not assume that you are a Windows "power user." I do assume that you are familiar with your computer—that you can tell the keyboard from

the mouse and that you know the difference between a CD-ROM and a diskette.

If Windows 95 is already installed on your computer, you can skip Chapter 2. If you are not on a network, you can skip Chapter 11. If you don't use E-mail, you can skip Chapter 12. And so on. The chapter titles and their introductions tell you what you will learn. Most users can skip one or more chapters simply because the lessons of those chapters do not apply to them. A chapter on the Internet Explorer explains that program, which is available from Microsoft for no charge. Another chapter explains how the mysterious Registry works. An appendix describes the contents of Microsoft Plus!, an optional package that enhances the operation of Windows 95.

I hope you enjoy this book and find it useful. I hope you get as much satisfaction from using Windows 95 as I have. And I hope that all your computing is rewarding, productive, and absent of stress.

Al Stevens
June 1997



CHAPTER 1

Out of the Box

This chapter is your introduction to *teach yourself... Windows 95*. You will learn:

- An introductory description of Windows 95
- Why you should use Windows 95
- The history of the Windows family of operating systems
- The organization of this book

WHAT IS WINDOWS 95?

Windows 95 is an *operating system*. An operating system is the program that manages two interfaces: the interface between the user and the applications and the interface between the applications and the computer's devices and files.

Venerable old MS-DOS is an operating system, albeit a simple one. Its user interface is the C> prompt and a terse set of commands and parameters. MS-DOS lacks most of the features of contemporary heavy-duty operating systems—a 32-bit address space, preemptive multitasking, long file names, and so on.

Windows 3.1 is a graphical user interface (GUI) *operating environment* that runs on top of the MS-DOS operating system—what detractors have jokingly called a “thing on a thing.”

Windows versions 1 through 3.1 relied on the antiquated MS-DOS file system. The upgrade to version 3.11 added a 32-bit file system, which served as a preview of the improvements found in Windows 95.

Windows 95 has a new user interface, and it integrates vital system functions that used to be distributed among different utility packages from different vendors—packages such as networks, on-line services, electronic mail, groupware, and system administration and management. You access all the component parts of your computing environment—documents, files, applications, networked peers, servers, mailboxes, printers, faxes, CD-ROMs—from a common user interface.

The Windows 95 user interface improves on earlier versions of Windows. Each document, folder, and application is represented by an icon on the desktop. Folders can contain folders. Printing, deleting, and copying of documents are now common drag-and-drop operations.

To support old MS-DOS-based programs—called *legacy* programs—Windows 95 has a DOS component. You can still run text-mode programs from a C> prompt command line, but the Windows 95 GUI and the file system are integrated with an operating system complete with all those things that MS-DOS lacked.

Windows 95 also runs virtually all programs that were developed specifically for Windows 3.0 and 3.1.

WHY WINDOWS 95?

Why change to Windows 95? Why abandon the current operating environment on your PC when everything is working so well? There are several reasons.

First, Windows 95 is easier to learn and use than any of its predecessors. Arguably, it is easier than its competitors, too, although such an assertion can

start vigorous debates among users who are loyal to their favorite operating systems. Microsoft conducted extensive research into how users work. It tested many user interface models with a great number of users who had diverse computer experience. The Windows 95 shell and application interface model are the result of that research.

Second, Windows 95 and its applications run under the PC's *protected mode*, which means that one ill-behaved program cannot compromise the memory and resources of another. This approach adds a large measure of reliability to your total operating environment. The crash of a single errant program does not automatically crash the operating system or any of the other programs that you are running.

Third, Windows 95's *preemptive multitasking* means that programs running in the background do not significantly degrade the interactive program that you are running in the foreground. You can comfortably type into your word processor while your database system backs up all its files. Under Windows 3.1, the typed key displays lagged behind while the backup procedure hogged the processor.

Fourth, Windows 95 integrates virtually all your computing tasks and resources—networks, E-mail, multimedia, system administration, printing, faxing, applications—into one common user interface.

Finally, new applications from third-party vendors and new upgrades to old applications have been and are being designed for Windows 95. Eventually, if Microsoft has its way, all PC applications will be built to run under Windows 95. Today, new PCs are shipped with Windows 95 as part of the package, and updates and add-ons are continually being developed at Microsoft to take advantage of the latest hardware developments. Software developers are exploiting new programming features that Windows 3.1 did not offer, such as preemptive multitasking and task threading; and those same developers are convinced that Windows 95 is where the future—and, consequently, their market—is heading. Microsoft is bolstering that notion by restricting the use of the coveted Windows logo to applications that meet certain standards, and these standards specify that the software must implement features available only on Windows 95 and Windows NT.

A BRIEF HISTORY OF WINDOWS

It seems hard to believe now, but Windows wasn't always everywhere. In November 1983, Microsoft announced the first version of an as-yet unde-

signed and unspecified operating environment with the seemingly uninspired name of *Windows*. It would add to the IBM PC a graphical user interface and device independence for applications. The announcement was a preemptive marketing ploy to offset in-place and impending announcements from other vendors of similar GUI environments for personal computers, most prominently the Macintosh. The announcement promised shipment by April 1984, but Windows was not ready until November 1985.

The first version of Windows was premature at best and underpowered at worst. There were no applications of any consequence to run on it, and its GUI used a tiled window presentation instead of the overlapped window model that the Macintosh had introduced nearly two years earlier. Windows 1 was ugly and ineffective. The marketplace of users and applications developers mostly ignored it.

In October 1987, Microsoft announced Windows 2.0 and a companion product named Windows 386, which ran only on 386 machines and which took advantage of the newer CPU's advanced architecture. Both products used overlapping windows. The first version of Windows was shipped with Microsoft Excel, the company's spreadsheet application, which ran under the Windows GUI. Windows 2.03, a retail version of the operating environment alone, shipped in January 1988. Applications developers began to warm up to this environment, but its poor performance on mainstream PCs of the day postponed its widespread acceptance by users, and applications developers, seeing no demand for Windows applications, bided their time.

Windows 3 was announced in May 1990 in a Manhattan media blitz extravaganza. The new version offered minimum workstation support for networks (assuming that the workstation software was already installed in the host MS-DOS environment) and an improved user interface. Windows 286 and 386 were merged into a single product with Windows 3. PCs with sufficient speed and memory had become widely available to support this platform, and Windows software development finally took off, fueled by a new demand for Windows versions of popular applications.

In April 1992, Microsoft announced Windows 3.1 and Windows NT at the Windows World Conference in Chicago. Version 3.1 added TrueType fonts, further improvements to the user interface, and *object linking and embedding* (OLE), a technique for sharing data between complying applications.

Windows NT is a portable operating system with roots in OS/2, which Microsoft originally developed through an agreement with IBM. When IBM and Microsoft severed their association, Microsoft proceeded with NT, develop-

ing it to run on other hardware platforms in addition to the PC. Windows NT does not run on top of MS-DOS; it is its own operating system and integrates the file system and the GUI. NT also integrates networking software with the operating system. A network installation does not need to run a separate network operating system, such as Netware, to connect NT machines in a network. Windows NT is a 32-bit, protected mode, preemptive multitasking, threaded operating system with a GUI shell that is virtually the same as the Windows 95 GUI. You can run MS-DOS programs, Windows 3.1 programs, Windows 95 programs, Windows NT programs, and even some OS/2 and POSIX programs under Windows NT. Until recently, it has enjoyed limited success as a desktop operating system, and is used primarily to run servers that require the nearly bulletproof reliability NT can offer. Windows NT has not been a runaway bestseller, mainly because until recently it used the Windows 3.1 interface and made heavy demands on hardware. Now it has the Windows 95 interface, and the hardware is catching up.

In 1993, Microsoft introduced Windows for Workgroups. This product is Windows 3.1 with peer-to-peer networking support added, which means that PCs running Windows for Workgroups and connected in a network can share resources such as files and printers. No third-party network software is required.

A 1994 upgrade of Windows 3.1 and Windows for Workgroups to version 3.11 added 32-bit file support and other advanced features that Microsoft was testing for Windows 95.

The big splash Windows 95 made when it hit the water in 1995 has proved successful. Today, Windows 95 is enjoying spreading popularity with users and software manufacturers alike. In fact, Microsoft reports that it is selling three to five million copies per month. Chances are, you'll be able to find your favorite applications in a Windows 95 version—and get support for them online with any of the commercial online services. When you buy a new computer, it is likely that Windows 95 will already be installed. Microsoft has now turned its attention to launching a full-scale Internet approach, continually revising and expanding its Microsoft Network, offering various Internet services, and establishing its presence on the World Wide Web. All of these changes will simply serve to make Windows 95 more connectable, more usable, and more seamlessly able to handle your day-to-day computing tasks.

Since Windows 95 first shipped, in a August 1995, no upgrade has been released. Microsoft has developed a number of add-on features and enhancements, however, that help you take advantage of new technologies.

Throughout the book, I will mention these enhancements, which you can download from the Microsoft Web site to help make your use of Windows 95 even more profitable.

HOW THIS BOOK IS ORGANIZED

This book lets you teach yourself how to use the Windows 95 operating system. Windows 95 is a complex environment that tries hard to hide its complexities inside an intuitive user interface. The complexity is necessary for an operating system that encapsulates so many functions and controls so much of a user's total computing resources.

Chapter 2 explains how to install Windows 95, what can go wrong, and how to uninstall it as a last resort.

Chapter 3 is about the Windows 95 desktop, where you organize your documents, files, and applications.

Chapter 4 explains the basic unit of an application—the window—what it consists of, and how you use those parts.

Chapter 5 describes the document-centric workplace that Windows 95 promotes. The user interface allows you to concentrate more on your work and less on the programs that support you—or so they say.

Chapter 6 is about applications. It describes how Windows applications work and how you use their menus, toolbars, dialog boxes, and multiple document windows. Chapter 6 also explains how you can run DOS applications and integrate them into your workplace.

Chapter 7 describes many of the accessory applications that come with Windows 95.

Chapter 8 explains the Windows 95 Help system.

Chapter 9 tells you how to use the Control Panel program to modify and enhance Windows 95. You will learn how to add and remove devices and software, change the properties of devices, and modify the appearance and behavior of the desktop.

Chapter 10 is about printing and faxing.

Chapter 11 discusses Windows 95 in networks. You will learn how to join a workgroup, share your disks and printers, and use the shared disks and printers in other PCs on the network.

Chapter 12 explores Microsoft Exchange, a program provided with Windows 95 that enables you to compose, send, and retrieve e-mail and faxes.

Chapter 13 is about the multimedia extensions to Windows 95. You will learn how to install and use multimedia devices to record and play sound effects, music, and video clips.

Chapter 14 discusses mobile computing: taking your files and programs on the road with a laptop synchronized to your office computer and network.

Chapter 15 explains how you can use diagnostics to troubleshoot your hard disk and how to install disk compression to double the effective capacity of the hard drive.

Chapter 16 is about the Microsoft Network, the online service that is built into Windows 95.

Chapter 17 introduces you to the Internet Explorer, the program that enables you to browse the World Wide Web.

Chapter 18 is about legacy computing: how to run Windows 95 with the familiar Windows 3.1 Program and File Managers, and how to run MS-DOS applications.

Chapter 19 takes a look at the Windows 95 Registry and gives you some basic information on dealing with Registry problems.

The book concludes with a comprehensive glossary and two appendixes. Appendix A details the features of Microsoft Plus!, a set of add-on utilities. Appendix B gives you an overview of upgrades and add-ons you can download from Microsoft's Web site.

WHAT TO EXPECT

It is my intention in these chapters to be brief and concise and to allow you to teach yourself by following on your own PC the examples I've provided. That's not always possible. There are as many different configurations for PCs as there are potential readers of this book, and this book cannot represent every one. I've used a simple configuration that should be typical of most personal computers. It's a lowest common denominator most of the time, but I've expanded my PC—connected to networks, used modem and direct connections, and so on—where necessary to demonstrate a point. That explains the differing desktop configurations shown in the screen shots. When my desktop

differs from yours, do not be dismayed. Bear with me, learn the essence of my examples, and apply the lessons you've learned to your own setup.

This book is a tutorial. It is not a wall-to-wall reference work on every aspect of Windows 95. Such a work would take several volumes and would be organized much differently. I hope that from this book you get a comfortable grasp of the basics of setting up and using Windows 95 productively. From that foundation you can go forward and become a true power user. Let's get started.



CHAPTER 2

Installing Windows 95

Before you can go any further, you have to install Windows 95. Many people buy their PCs with Windows 95 already installed. Others will have made their way through the installation before reading this book. If Windows 95 is already installed on your PC, you can skip this chapter.

Much of this chapter deals with what can go wrong with the installation and how to deal with it. Microsoft's installation documentation doesn't tell you some of what this chapter reveals, and installation is where computer users have most of their trouble.

You will learn about:

- Preparing for installation
- Running Setup
- Uninstalling Windows 95

PREPARING FOR INSTALLATION

Windows 95 almost installs itself. It does, that is, if you have a plain, vanilla PC with no unusual options. If you have that, then installation is a snap. Well, actually, it's more like a long continuous scrape than a snap, because installing Windows 95 takes a long time. If your PC is unusual, installation can be fraught with peril.

Let's talk first about some of the issues of installation. Then we'll go into more detail about the installation itself.

The Installation Blues

The more complex software is, the more likely it is to fail during installation. I've installed every version of DOS since 1.0, every version of Windows, Windows NT, IBM OS/2, Novell Netware, applications of all kinds, and now Windows 95, all on many different computers with many diverse configurations. It's never been easy, but it gets harder as the operating systems gain complexity. The many different computers have had a wide array of nonstandard options—video adapters, mice, scanners, network adapters, sound cards, CD-ROM drives, and so on. I say “nonstandard” because there is no standard for any of them.

We might assume that just because everything is plugged in and working well under an older operating system, the new operating system picks up where the old one leaves off and installs itself seamlessly. We might assume that; but we would be wrong most of the time.

Many of you suffered through the pains of installing all your devices by setting and coordinating such things as IRQ numbers, DMA numbers, port address values, and memory buffer addresses, constantly making sure that none of the assignments conflicted with any of the others. Then you had to install the proper device driver programs on your hard disk and into memory with entries in files named **config.sys** and **autoexec.bat**. Those of you who did all that remember what a daunting task it can be. The rest of you purchased your computers with everything already installed, or you hired consultants. Macintosh users have been laughing at us for years. Why? Because with a Mac, you buy an upgrade and plug it in, and it works right away with no configuration items to worry about.

There is simply no good reason why you should have to deal with all that stuff again just because you are upgrading to the next version of Windows. In most cases, we hope, you will not have to. The Windows 95 installation procedure tries hard to get it right the first time without getting you involved in anything more complicated than inserting the right disk in the right drive at the right time and pressing the **Enter** key.

When (and if) all PCs and all their component parts comply with a standard called *Plug and Play*, we will enjoy the same ease in upgrading our PC systems that Macintosh users have had since the first Mac came out in early 1984. Until then, we must continue to worry about component and software compatibility issues.

What Do You Need?

I'm assuming that you have a PC with MS-DOS and maybe Windows 3.1 installed. I'm also assuming that you know how to turn it on and run a program from the DOS prompt. If you have Windows 3.1 installed, I'm assuming that you know how to run a program from the Program Manager's **File/Run** menu selection.

Microsoft tells us that the minimum configuration for Windows 95 consists of a 386 with 4 MB of RAM and 35 MB free disk space. It does not specify a minimum processor speed. After driving it around the block a few times however I think that you need at least a 486/40, 8 MB of RAM, a VGA, and a *fast* hard drive if you are to be happy with Windows 95. And if you plan to take full advantage of Web offerings with Internet Explorer, even 8 MB will be a bit tight—you'll be more comfortable with 16 MB of RAM. It might run with less horsepower, but you won't be happy. The faster the processor, the more memory you have, and the better the VGA (better usually means faster, having more memory, and more expensive), the happier you will be.

That's how Microsoft has always worked. It produces software that does not run efficiently on mainstream hardware. Before long, yesterday's high-end PC becomes today's mainstream machine, and everyone forgets how badly the software used to run. People who have less than the minimum configuration will probably try to install Windows 95 anyway. Then, when they realize that what I am saying is true, they will shrug it off and upgrade their hardware. When enough of them do that, the baseline for the mainstream PC rises. That's how it is, always has been, and always will be.

Incompatible Devices

A big concern to you as a first-time installer is that Windows 95 might not support one of the devices on your PC. This happens frequently with CD-ROM drives, network adapters, scanners, tape backup systems, and sound cards.

For example, I have a perfectly good 486 configuration that runs quite well with DOS 6.2 and Windows for Workgroups 3.11. The PC is equipped with a Teac SuperQuad CD-ROM drive, a Turtle Beach Multisound card, and a Gateway Communications Ethernet network card. In its final beta configuration, Windows 95 did not include driver programs to support those devices. By getting some on-line help from other beta testers and applying some unconventional procedures, I was able to force Windows 95 to use the 16-bit DOS drivers for the sound and CD-ROM card. But I had to buy a new network adapter. The old one goes onto the junk pile.

To make the right decisions about those incompatible devices, I had to get help and bring to bear skills usually known only to programmers and system integrators. Luckily, with the release of Windows 95, manufacturers of devices large and small rushed to market with Windows-95-compatible drives. My CD-ROM and sound card are now supported, but the network card stays in the junk pile.

A bigger concern is that a device in your PC might go undetected by Windows 95, and somewhere during the installation everything might hang up. Microsoft understands these problems and has a stable of technical support people ready to assist you if you get stuck during installation (206-635-7000). In a perfect world, all possible configurations have been thoroughly tested and all bugs stomped on by the time you get your hands on the released version. There is no perfect world.

I'm warning you about these problems to drive home a point. Windows 95 is a wonderful operating system—after you get it going. Its network support, which we'll discuss at length in Chapter 11, is marvellous. The look and feel of its new shell and of applications, which are the subjects of most of the other chapters, are far more intuitive than any of Windows 95's predecessors and competitors. But, as with its predecessors, installing Windows 95 can be a challenge. It's worth it, however.

Take Out the Odd Cards

You should find a hardware compatibility list included in the Windows 95 package. If there is one, it lists devices that Windows 95 has been tested with. You

can deduce from the number of devices that Microsoft could not have tested every possible combination of devices. Maybe you have one of the combinations that wasn't tested. Or maybe you have devices that are not on the list.

I'm assuming that you know what kind of hardware you have. If any of your devices are not supported, take them out of the machine before you install Windows 95. After you have a good installation running, you can put the questionable cards back in one at a time and see what happens. I'll be telling you some things to try later.

If you don't know what the hardware is, try to find out. Unless you bought your computer at a yard sale, it probably came with a list of components. There might even be individual manuals for the installed adapters. If you don't have this information, try opening the computer and looking at the cards. The manufacturer and model number are usually stamped somewhere on the card.

While you are looking at the cards and their documentation, write down the settings of the jumpers and switches on the cards. If the documentation or imprints on the cards tell you what the jumpers mean, write that information down. You might need to know those details later.

If you don't know how to handle hardware or don't feel comfortable doing it, get some help. Everybody has a neighbor or co-worker who knows about such things and who is available (if not always champing at the bit) to help you with your computer. I know that all my neighbors know a guy like that.

Read the Funny Manuals

There should also be an installation manual in the Windows 95 box. Read it. The procedures for installation are different depending on your PC's prior operating system and whether you are installing from a CD-ROM or from diskettes. Pay particular attention to the installation manual's reference to text files on the installation disks. Before you start, read those files carefully using a text editor. They tell you about specific hardware devices and applications that are known to present problems or that need special attention to run properly under Windows 95.

Unsupported Video Cards

If your video adapter is not on the list, make sure that the adapter can support unadorned VGA video modes, and install Windows 95 to run that way. You

need a video card to run or install anything, so you can't take that card out of the machine. If your video card cannot support normal VGA video modes, get a VGA-compatible video card before you proceed. This may be something you can download from Microsoft's Web site at <http://www.microsoft.com>.

Do a Backup

If you have a tape or other kind of mass storage backup unit, do a complete backup of your hard disks before you proceed. I know, it's a pain in the neck and takes too long, and you are sure that everything is going to be OK—but make that backup anyway. You probably won't do it. I didn't. I was sorry.

Make a Bootable MS-DOS Diskette

If you do not have a backup unit, at least make an MS-DOS bootable diskette. Microsoft cannot have encountered every circumstance under which the Windows 95 installation can fail, and it is unlikely that the company has provided automatic recovery procedures for every possible failure condition. If you can boot MS-DOS from a diskette, you have a chance of doing something constructive about a failed Windows 95 installation that leaves your PC unbootable from the hard drive.

Use the MS-DOS **FORMAT** command to make a bootable diskette, as shown here:

```
format a: \S
```

Make a Copy of C:\DOS

This next part is important. The Windows 95 installation procedure does a bad thing. For reasons that nobody at Microsoft has satisfactorily explained, the installation program deletes a lot of files from the earlier \DOS subdirectory. You'll need to be ready to restore these files.

Before you install Windows 95, make a copy of the contents of the \DOS subdirectory on your boot drive. There are two reasons for doing this. First, if you have to uninstall an aborted Windows 95 installation (explained next), you'll want those files in place so that you can use MS-DOS again. Second, and even more important, Windows 95 has a feature, which I'll explain later, that supports a dual boot configuration. You can decide at any time following

installation to boot Windows 95 or your previous version of MS-DOS. If you use this feature, you'll want your old DOS commands to be intact when you boot MS-DOS. The Windows 95 installation procedure deletes many of the DOS command files so you need to make that copy to restore them after Windows 95 deletes them.

The \DOS subdirectory contains almost five megabytes if you are using MS-DOS 6.2. You'll need four or five high-density diskettes to make this copy.

PREPARING TO UNINSTALL WINDOWS 95

Setup presents an option of saving your MS-DOS and Windows 3.1 system files so that you can uninstall Windows 95. Setup saves the system files in a hidden, compressed file on a local hard drive. You can't save them to a network drive or a floppy disk.

Setup does not give you this Setup option if you are installing to a new directory or if you are running a version of MS-DOS earlier than 5.0.

The uninstall files must be saved on a local hard drive and not on a network drive or floppy disk. They take from six to nine megabytes of disk space. You can specify that they be written on a disk drive other than the one where you are installing Windows 95. I strongly recommend that you use this option. You can recover the space later when Windows 95 is properly installed and you are happy with it. Later in this chapter, I'll tell you how to eliminate the uninstall files.

This uninstall feature is not available when you are installing over a previous version of Windows 95. When might you need to uninstall Windows 95? If you are having trouble with the program, uninstalling and then reinstalling it may clear up glitches you may be experiencing. To uninstall the program, start the Setup program as described in the next section and choose the Uninstall option when it is presented.

SETUP

Now you are ready to install Windows 95. You will be installing either from one CD-ROM or from more than a dozen diskettes. Put the CD-ROM in its drive or the diskette labeled Disk1/Setup in the A: drive.

Running Setup

If you have an earlier version of Windows installed, load it, switch to the Program Manager, and choose the **Run** command from the File menu. Otherwise, run Setup from the MS-DOS command line. Enter this command:

```
a:\setup
```

The Windows 95 Setup program starts, and you see the Windows 95 Setup dialog box shown in Figure 2.1.

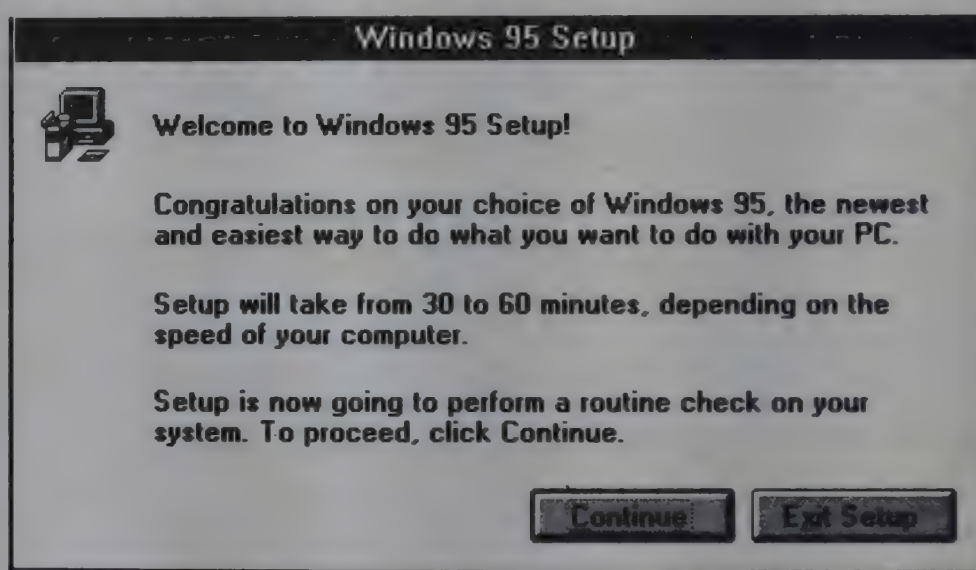


Figure 2.1 First Setup window.

There are a number of things to learn from Figure 2.1. It shows a *dialog box*, which is the way that Windows 95 collects information from you. You'll learn more about dialog boxes in the chapters that follow.

The dialog box in Figure 2.1 gets your decision about whether to proceed with the Setup program. The dialog box has two *command buttons* labeled **Continue** and **Exit Setup**. One command button represents a decision to continue with the installation procedure, and the other represents a decision to abandon the installation procedure and terminate the Setup program.

We'll assume that you want to proceed. Either press the **Enter** key on the keyboard or move the mouse cursor to the **Continue** button on the dialog box and press the left mouse button. This mouse action is called *clicking* the button. Pressing **Enter** works because the **Continue** button is *selected*, which you

can tell by the dotted line that surrounds the button's label. The other button is not selected. Pressing **Enter** when a button is selected or clicking the button with the mouse is called *choosing* the command. We'll use that terminology from this point forward. When I tell you to choose a command, you should use one of the techniques just described to make the choice. There are other ways, but these get you through the Setup program.

Windows 95 Setup dialog boxes have the appearance of Windows 3.1 dialog boxes. That is because Setup is running under Windows 3.1. After installation, Windows 95 dialog boxes take on a new look.

Setup runs with a minimum of user interaction, asking you only for the information that it cannot determine for itself. Its displays keep you informed about what it is doing each step of the way. Setup begins by making a routine check on the hardware, and then Setup prepares the Windows 95 Setup Wizard.

If you are installing from diskettes, Setup asks you to insert diskettes when it needs them. Figure 2.2 is the Insert Disk dialog box that prompts you for diskettes.

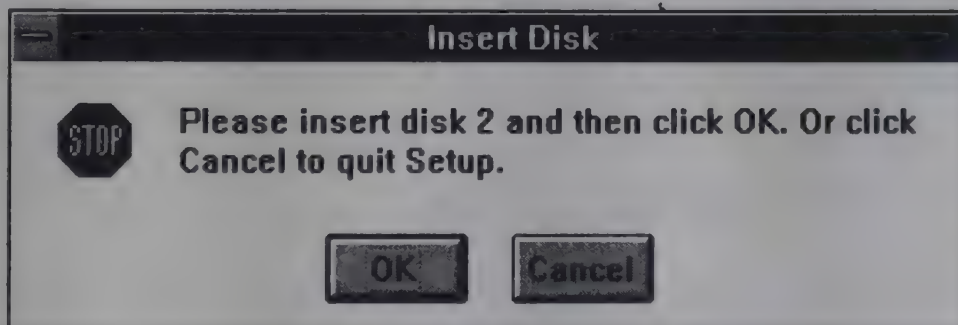


Figure 2.2 Insert disk dialog box.

After you have changed the diskette, choose the **OK** command button.

Setup Wizard

Setup operates by using what Microsoft calls a *wizard*, which is a program that knows what details it needs in order to build something. A wizard guides you through a procedure, finding the details that it can from the system and asking you to provide the rest. Figure 2.3 shows the first dialog box of the Windows 95 Setup Wizard.



Figure 2.3 Setup Wizard.

Notice that the Setup Wizard dialog box has three command buttons labeled **Back**, **Next**, and **Cancel**. This pattern is common with wizards. It allows you to proceed, return to a prior step, or decide to stop the procedure altogether.

This display shows the three primary steps of Setup and highlights the first step, which is currently in progress.

Step 1: Collecting Information

When you choose the **Next** command, Setup displays a dialog box that asks you to select the directory where you want to install Windows 95. You can use the \WINDOWS subdirectory, which is usually where the old version of Windows is installed and which is the suggested option. If you select to install Windows 95 elsewhere, a dialog box asks you to specify the drive and directory where you want to install Windows 95. I am assuming that you take the default option here. Setup prepares the Windows directory and verifies that you have enough disk space for the installation.

Setup displays the Setup Options dialog box shown in Figure 2.4.

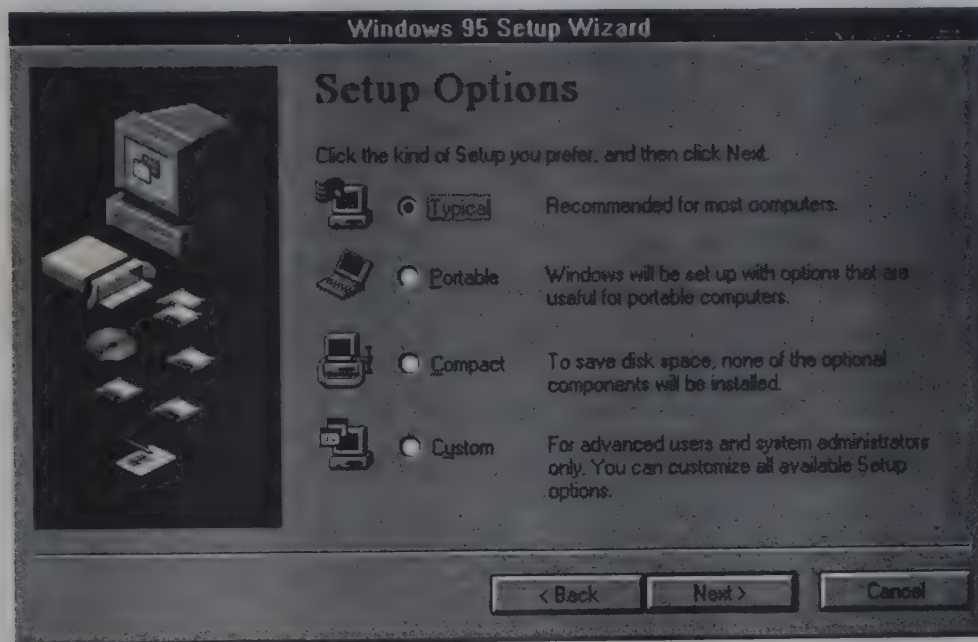


Figure 2.4 Setup options.

Figure 2.4 shows *radio buttons* that you use to select one of several mutually exclusive options. Radio buttons always come in groups, and only one radio button in a group can be chosen. You choose a radio button by clicking the button or the label next to it or by pressing the **Alt** key along with the underlined letter or number in the radio button's label. The underlined character is called the *shortcut key*. When you choose a radio button, the currently chosen one turns off. In Figure 2.4, the radio button labeled **T**ypical is chosen. We'll go with that one.

Setup displays a User Information dialog box. Type your name and company name in the *editboxes* on the dialog box. You can select the editboxes by clicking on them or by pressing the **Tab** key on the keyboard to change the selection. When the information in the editboxes is correct, choose the **N**ext command.

Setup now begins to analyze the hardware installed in your PC. The dialog box shown in Figure 2.5 starts that procedure.

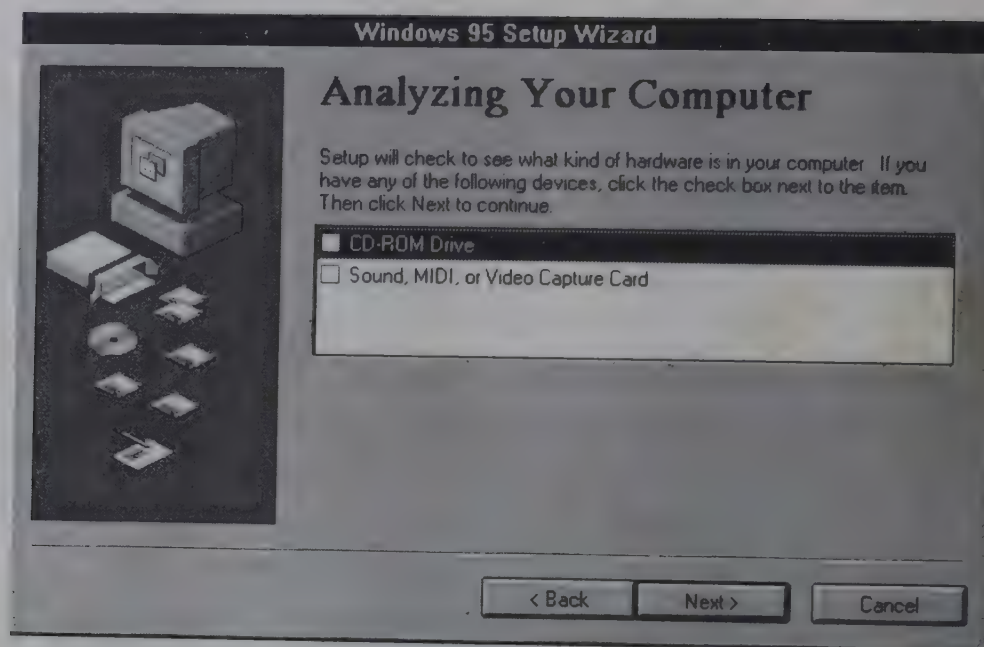


Figure 2.5 Analyzing your computer

The two data entry boxes in Figure 2.5 are called *checkboxes*. These input fields are similar to radio buttons except that more than one of them in a group can be chosen. You choose a checkbox the same way you do a radio button. These particular checkboxes have no shortcut keys, so you need a different procedure to choose them from the keyboard. You can select a checkbox to choose by tabbing from one to the next and pressing the Spacebar to toggle the selected checkbox's choice.

For this discussion, I assume that you choose neither of the selections. Analyzing the computer takes several minutes. Another dialog box asks you which Windows components to install. Choose here to install the common components.

Setup next displays the Identification dialog box shown in Figure 2.6. The information that you enter here relates to your participation in a network. If you are installing over Windows for Workgroups, these fields are already filled in and you can choose **Next** to proceed.

Setup asks for the fields in the Identification dialog box even if no network is involved. Give your computer a name and a description. If you are not in a network, no workgroup is involved and you can leave that field blank. Otherwise, if the field was not filled in by Setup, you need to ask your network administrator for the workgroup name. If that information is not available when you are running Setup, leave the field blank. You can fill it in later from the Control Panel, and Chapter 11 describes how.

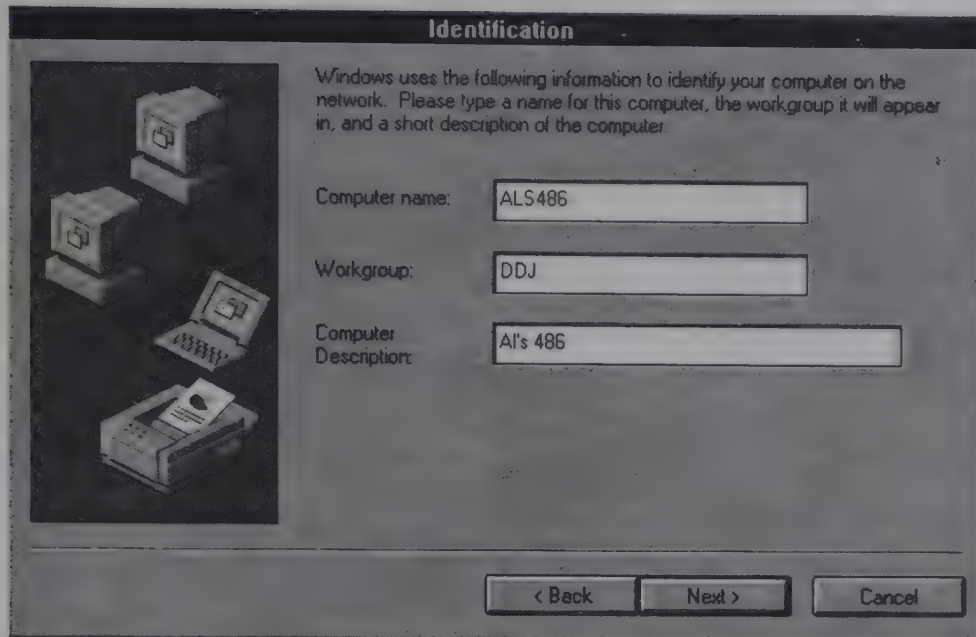


Figure 2.6 Identification dialog box.

Setup asks now whether you want to build a Startup Disk. I recommend that you do. You need a 1.2-MB or 1.44-MB diskette. Setup asks you to insert the diskette in whichever drive you specify, and Setup builds the diskette. If you decide not to build the diskette at this time, you can do so after Windows 95 is installed. If you expect trouble with the installation, building the diskette is another preventive measure that you can take.

Step 2: Copying Files

Setup now displays the Setup Wizard dialog box with the second step, Copying Windows 95 Files, highlighted. This step takes a long time. Setup copies all the files from the CD-ROM or the diskettes to the PC's hard disk. Along the way it displays friendly messages about Windows 95. You don't have to read those messages, but they entertain, and they provide a preview of some of the improvements that Windows 95 brings to your computing environment. If you are installing from diskettes, the dialog box in Figure 2.2 prompts you for each one.

Step 3: Finishing Setup

When all the files are copied, Setup prepares to restart your computer to complete the installation procedure. It displays the Setup Wizard dialog box with the third step highlighted. Choose the **Finish** command button. This step takes a long time, too.

After rebooting your computer, a dialog box asks you to enter your name and a password. If you enter a password, you'll have to enter it every time you restart your computer.

Next, Setup initializes whatever hardware that it found. It sets up the Control Panel application, the Start menu, and the Help system. You learn about all these things in later chapters.

Date and Time

Windows 95 is now installed and running. The Setup program is still in control, however, and it has two more things for you to do. First, Setup displays the Date/Time Properties dialog box shown in Figure 2.7. This dialog box allows you to set the date and time and to set the correct time zone.

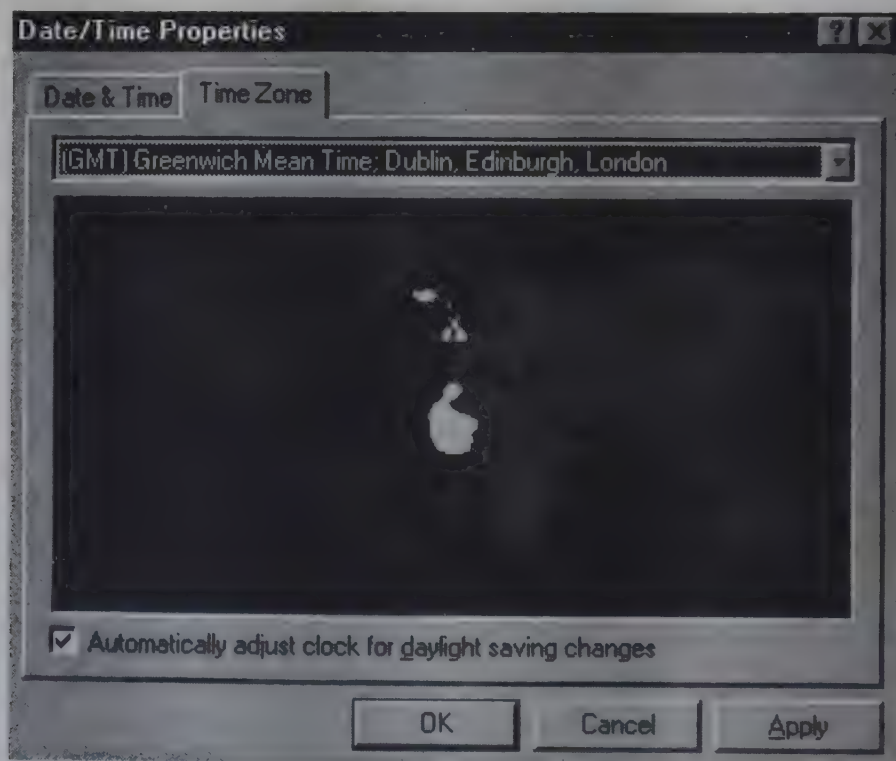


Figure 2.7 Date/Time Properties dialog box.

If Windows 95 assumes that you are somewhere you're not—such as the Greenwich Mean Time time zone—you can change the time zone now or change it from the Control Panel. Chapter 9 explains the procedure for changing the time zone and for setting the current date and time.

On-Line Registration

Windows 95 includes a process that lets you register your ownership of the program through your modem. If Setup found a modem when it analyzed your software, you can use this feature now. Your PC calls Microsoft and registers the software. Setup displays the Welcome dialog box shown in Figure 2.8.

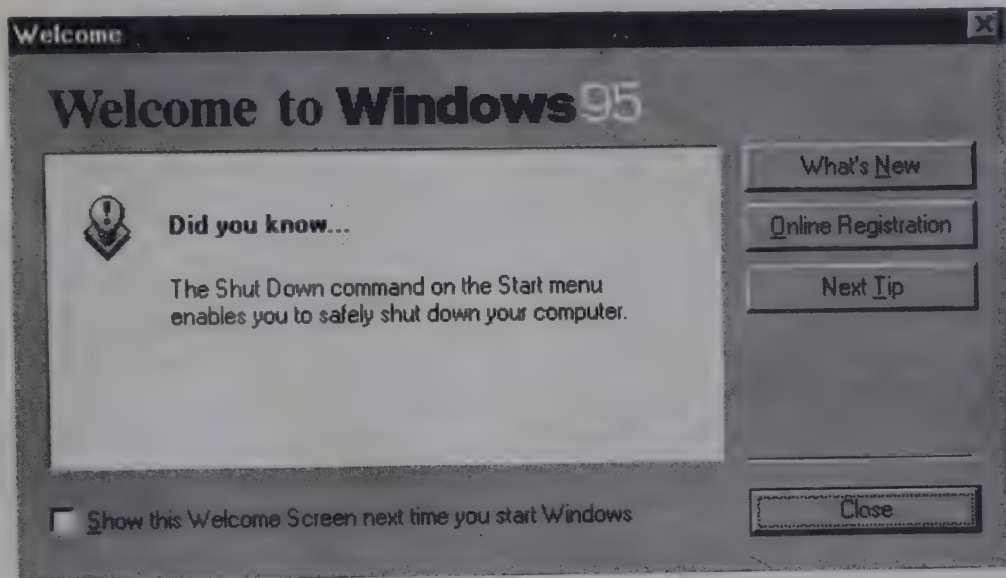


Figure 2.8 On-line registration.

If you choose the **Online Registration** button, another wizard starts up to lead you through the registration process. It asks you for your name, address, and phone number, and asks a few other questions. Then your PC uses your modem to automatically call Microsoft and register your copy of Windows 95 to you. The benefits of doing this are unspecified and vague. No doubt you will be placed on a mailing list.

If everything about the installation worked and Windows 95 is properly installed and running, you can proceed now to Chapter 3.

SAFE MODE

If the installation did not work and you do not have a stable, operational Windows 95 running, you might be able to reboot under *safe mode* and troubleshoot the problem. Safe mode boots the operating system with default display and mouse settings, no network support, and the minimum necessary

device drivers. CD-ROMs, printers, modems, sound cards, scanners, tape backups, and anything not needed to run Windows 95 are left out of the system in safe mode. The idea is that maybe one of those devices or its driver software is causing the problem. Omitting them all can tell you if Windows 95 will run at all on your PC.

To boot under safe mode, reboot your computer. As soon as the screen displays the message "Starting Windows 95," press **F8** on the keyboard. You see the Startup menu shown in Figure 2.9.

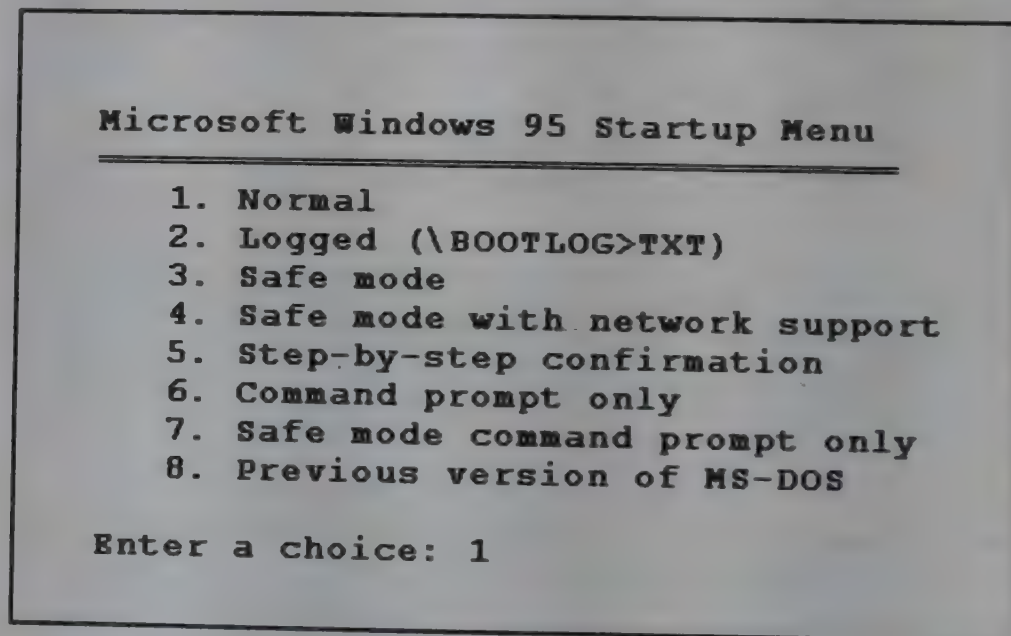


Figure 2.9 Startup menu.

Observe selection 8 on the Startup menu in Figure 2.9. This selection allows you to boot the version of MS-DOS that was on the computer before you installed Windows 95. This is the dual boot feature that I mentioned when I told you to make a backup copy of the \DOS subdirectory before you started the Windows 95 installation procedure. See "Dual Boot" later in this chapter.

Press the **3** key and the **Enter** key. Windows 95 tries to load itself in safe mode. If it does, you see the Windows 95 desktop shown in Figure 2.10.



Figure 2.10 Windows 95 safe mode.

If you got this far, then the problem is related to one of the device drivers that Setup installed. You need to figure out which one. You can selectively remove or reconfigure devices one-by-one from the Control Panel and reboot in normal mode until the problem goes away. Chapter 9 explains the Control Panel.

If you did not get this far, then the problem could be with contentious hardware. Remove the adapter cards that you do not need from the PC one at a time and reboot until the problem goes away. Look at the configuration of the last card removed to see whether it conflicts with something else. This conflict is a long shot. If your computer worked OK with its previous version of MS-DOS and Windows, it is not likely that your hardware is in conflict. Nonetheless, you have to look at every possible situation.

This troubleshooting procedure is an iterative one. The Windows Help system has a topic called Troubleshooting Windows Startup Problems, but you need Windows 95 running to read the topic. If you are able to boot Windows 95 in safe mode, you should read this information. Chapter 8 is about using Windows Help.

UNINSTALLING WINDOWS 95

Let's assume that the Windows 95 installation has failed and that you cannot boot your computer from the hard drive or that when you do, the running system is unusable for one reason or another. Safe mode has not helped you, and you want to retreat, uninstall Windows 95, and reinstall MS-DOS and the previous version of Windows.

In another possible scenario, you have successfully installed Windows 95, but its performance is unacceptable because your hardware is less than the minimum required. For example, I installed Windows 95 on a 486/20 laptop with a compressed 40-MB hard drive. The laptop runs fine under MS-DOS 6.2 with Windows 3.1, but only a masochist would use that system with Windows 95. It was agonizingly slow.

I assume that you followed the procedures above for preparing for installation of Windows 95 and preparing to uninstall Windows 95.

I assume that you chose the Setup option that saved your MS-DOS and Windows 3.1 system files. You can uninstall Windows 95 from the Windows 95 desktop, from an MS-DOS session that you can boot to, or from the emergency Startup Disk that Setup built.



NOTE

If you upgraded your system from Windows 3.1 to Windows 95, you will be able to uninstall Windows 95 as the following section describes. If, however, you purchased your system with Windows 95 already installed or you installed it yourself on a new computer, uninstalling the program will not be an option for you. If you need to correct problems you are having with Windows 95 and you can't uninstall it, try reinstalling it. Windows 95 installation includes a utility that automatically searches out and fixes any program files that have been damaged or corrupted.

Uninstalling from the Windows 95 Desktop

To uninstall Windows 95 from its desktop, follow these steps:

1. Click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Add/Remove Programs** icon.
3. On the **Install/Uninstall** tab, click **Windows 95** and then click **Remove**.

Uninstalling from a Windows 95 MS-DOS Session

To uninstall Windows 95 from an MS-DOS session, reboot the computer and press **F8** when you see the message "Starting Windows 95." The system displays the menu shown in Figure 2.9. Select **Command prompt only**. When Windows 95 displays the MS-DOS command prompt, enter the **UNINSTAL** command at the prompt and press **Enter**.

Uninstalling from the Startup Disk

To uninstall Windows 95 from the Startup Disk, put the disk in the A: drive and reboot the computer. The Startup Disk boots to an MS-DOS session at the MS-DOS command-line prompt. Enter the **UNINSTAL** command at the prompt and press **Enter**.

With Windows 95 uninstalled, you can try to isolate and correct the problem and then reinstall Windows 95.

REMOVING THE UNINSTALL FILES

After Windows 95 is set up and running properly, you will probably want to remove the uninstall files to recover the disk space they use. Don't do this now. Wait a while. Even though everything about Windows 95 on your computer looks good, wait until you see how you like it. Put a bookmark in this part of this book. When you are sure that Windows 95 is for you, return here and follow these instructions.

Open the Control Panel. In case you are impatient to get back those nine megabytes of disk space and won't wait until you've read further chapters, here is how you do that: Click the desktop's **Start** button, point to **Settings**, and click **Control Panel** on the cascaded menu.

Double-click the **Add/Remove Programs** icon on the Control Panel. This action opens the Add/Remove Programs Properties dialog box. Click the **Install/Uninstall** tab. Click **Old Windows 3.x/MS-DOS System Files** and then click **Remove**.

Your nine megabytes are returned to the disk system, and your option to uninstall Windows 95 has been disabled.

DUAL BOOT

Figure 2.9 shows a menu with the selection: “8. Previous version of MS-DOS.” This selection allows you to boot the previous version of MS-DOS rather than Windows 95.

The dual boot option is not a default feature. You must modify a Windows 95 system file in order to use it. That file, named **msdos.sys**, is a hidden, read-only file in the boot disk's root directory. This explanation assumes that you understand things that this book explains in later chapters. You might need to read those chapters first.

To view **msdos.sys** start by double-clicking the My Computer icon on the Windows 95 desktop. Next, double-click the boot drive's root directory folder and choose the **Options** command on the folder's View menu to open the View dialog box. Choose the View tabbed page, select **Show all files**, and deselect **Hide MS-DOS file extensions**. Click OK to close the Option dialog box. Right-click the **msdos.sys** icon in the boot drive's root directory folder. Choose the **Properties** command on the right-click menu. Deselect the **Read-only** attribute on the Properties dialog box and click OK.

Load the **msdos.sys** file into Notepad. Insert the line of text shown in Figure 2.11 that says **BootMulti=1**. The entry must be under the [Options] line of text. Save the file, close Notepad, and restore the **msdos.sys** file's read-only attribute from its Properties dialog box.

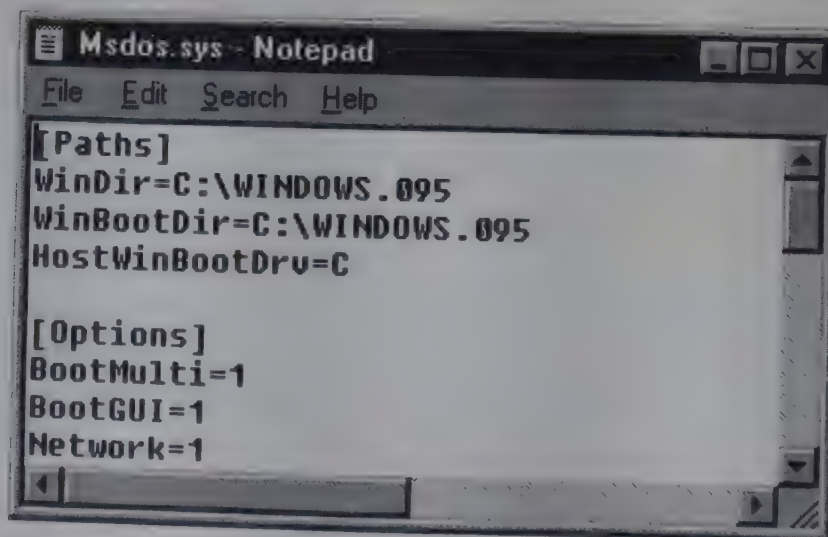


Figure 2.11 *Msdos.sys*.

The next time you boot Windows 95 and press F8 as described earlier in this Chapter, the dual boot menu selection will be included on the menu as shown in Figure 2.9.



CHAPTER 3

The Desktop

The most visible change in Windows 95 over earlier versions of Windows is the new user interface. Your first exposure to that change is the Windows 95 desktop—the full-screen display you see when you boot your PC and from which you work with documents and applications. This chapter describes the desktop and the things on it. You will learn about:

- Desktop
- Icons
- Taskbar
- Start menu
- Finding things
- Explorer

THE DESKTOP SHELL

You often hear the user interface command processor of an operating system called its *shell*. This term has its origins in older operating systems. Developers named the innermost part of those operating systems the *kernel*, as in the kernel of a nut. Successive layers surround the kernel, and the outermost layer is the shell. The shell layer provides the interface between you and the operating system.

MS-DOS has a shell, which is its command processor. The MS-DOS shell displays the `C>` prompt and reads and executes commands that you type on the text-mode command line.

Windows 3.1 replaced the MS-DOS shell with a graphical shell. Windows 95's shell is completely different from that of Windows 3.1, which is where the user interface improvements come in.

Figure 3.1 shows the Windows 95 desktop as you see it when you first boot Windows 95 after installation. Depending on the items you selected during installation, you may see additional icons on your desktop. If you installed Microsoft Exchange, for example, you will see an **Inbox** icon. If you clicked the options to install the Microsoft Network, you will see an icon for that item, and so on.



Figure 3.1 The desktop.

USER INTERFACE ACTIONS

There are some terms to learn about objects and actions that you take with respect to objects on the desktop and in folders. I'll explain these terms and actions here.

Icon

An *icon* is a picture. Windows 95 uses small graphical icons that represent *objects*—documents, applications, folders, devices, and other computers. An icon has a text label that further describes the object. The four small pictures with labels in the upper-left corner of Figure 3.1 are icons.

Selecting

Selecting an object is pointing to it without taking any further action. You select an object in one of several ways. First, if the object is not a menu selection, you *click* the object to select it, which means that you move the mouse cursor onto the icon and then press the left mouse button once. If the currently selected object is in a group, you can change the selected object with the arrow keys. You can change groups with the **Tab** and **Shift+Tab** keys and then use the arrow keys to select an object in the selected group.

A selected object is *highlighted*; its label has a dark background and is surrounded by a dotted line. A selected object is ready to be chosen.

Choosing

Choosing an object is activating the command associated with the object. You choose the object that an icon represents by *double-clicking* on the icon, which means that you move the mouse cursor onto the icon and then press the left mouse button rapidly two times. If the object is a menu selection or command button, however, you choose the object with a single click. You can also choose the object by selecting it first and then pressing the **Enter** key.

Drag and Drop

To *drag and drop* an object onto another object, move the mouse cursor onto the icon of the object to be dragged. Press down the left mouse button and

hold it down while you move the mouse cursor to the destination object's icon. Release the mouse button from that position to complete the drop.

The Right Mouse Button

If you move the mouse to almost anywhere or anything on the desktop or in a window and click the right mouse button, Windows 95 displays a menu with common commands for the object.

Many Windows applications use this same convention. Try it now. Move the mouse cursor to the clear area on the desktop and press the right mouse button. You see the menu shown in Figure 3.2.

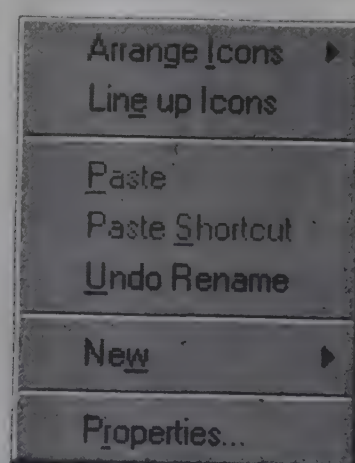


Figure 3.2 The Desktop Settings menu.

You'll learn to use this feature as the book proceeds. To close the menu, click the left mouse button anywhere else on the desktop or press the keyboard's **Esc** key.

ICONS ON THE DESKTOP

The upper-left corner of Figure 3.1 contains four icons. These icons provide access to your files and documents, other computers on the network, the recycle bin into which you remove items from the desktop, and a briefcase icon to synchronize the files on your desktop with those on a laptop computer.

My Computer

The *My Computer* icon on the desktop opens a view into the resources of the local computer. When you choose (double-click) the icon, you see the *My Computer* window shown in Figure 3.3.

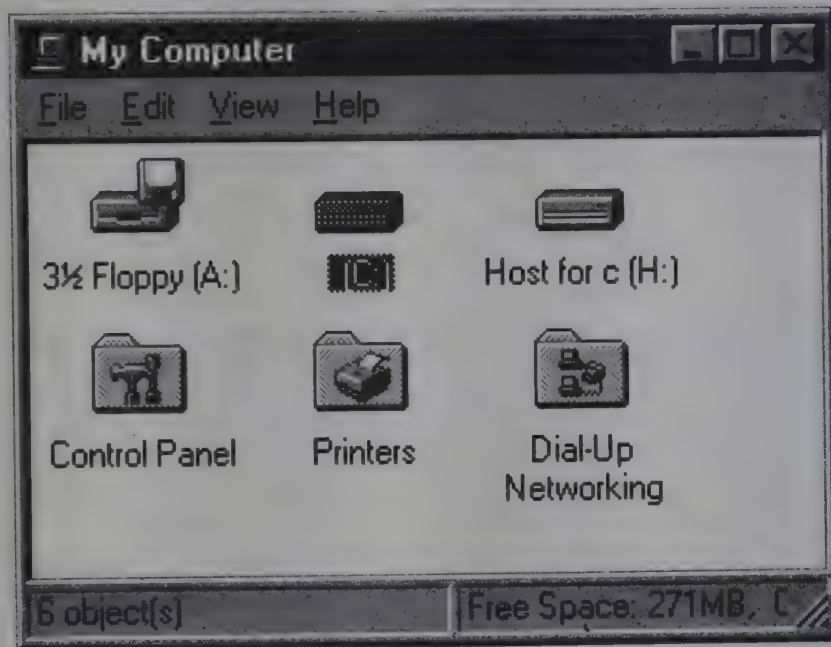


Figure 3.3 The My Computer window.

The contents of the *My Computer* window depend on the disk drives on your PC and the network support that is installed. Figure 3.3 shows a relatively simple configuration including one diskette drive and a compressed hard disk drive. There are icons to open the Control Panel, access the printers, and connect to other computers through dialup connections. Chapter 9 discusses the Control Panel; Chapter 10 discusses printing; Chapter 11 discusses networks.

The *Host for c(H:)* icon in Figure 3.3 is the host drive for the compressed c: drive. You rarely need to access a host drive. Some PCs have no compressed drives and, therefore, no host drives in the *My Computer* window. Chapter 15 explains drive compression.

To examine the contents of a drive, double-click its icon in the *My Computer* window. This technique is one of several ways that you can view the contents of a drive in Windows 95. The *Explorer*, for example, is another; you

will learn about the *Explorer* later in this chapter. Figure 3.4 shows the window that is displayed when you choose to view the C: drive.

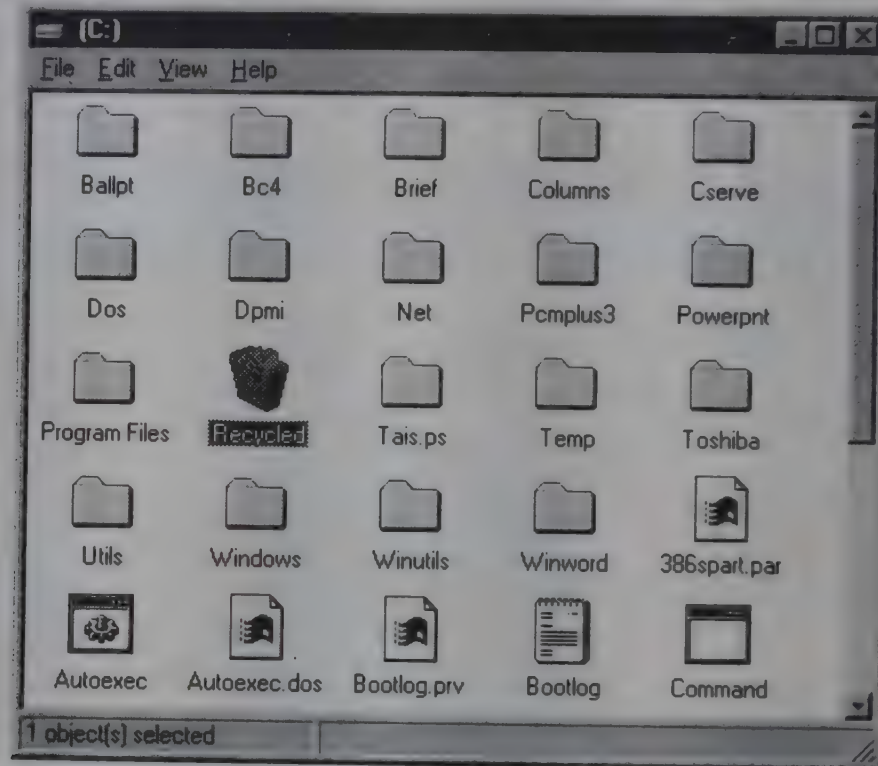


Figure 3.4 Viewing a disk drive.

The contents of the disk drive are represented by object icons. Folder icons are subdirectories in the file system. Other icons represent documents, data files, applications, and so on. You can open a folder by double-clicking its icon; you will see another window similar to the one in Figure 3.3. If you choose a document, the application with which it was created will open up and run with the chosen document loaded. If you choose an application, it executes immediately. If you choose an object that is not a folder, a recognized document, or an application, Windows 95 asks you which application should be used to process the object.

Network Neighborhood

The second icon on the desktop in Figure 3.1 is the *Network Neighborhood* object. This icon is available to you if your computer is part of a network or is equipped so it can be connected to one at some point. When you choose this object, it opens a window that displays the computers and shared printers in your network. Chapter 11 discusses the operation of the *Network Neighborhood* object.

Recycle Bin

The third icon on the desktop in Figure 3.1 is the *Recycle Bin* object. This object receives all deleted objects. You can delete folders, files, documents, applications, and so on. Instead of deleting those objects from the file system, Windows 95 puts them in the Recycle Bin.

You delete an object either by selecting it and pressing the **Del** key on the keyboard or by dragging and dropping the object into the Recycle Bin. These objects continue to exist in the Recycle Bin. You can get a deleted object back by dragging it out of the Recycle Bin and dropping it onto the desktop or into a folder.

When you choose the **Recycle Bin** icon on the desktop, you see the window shown in Figure 3.5.

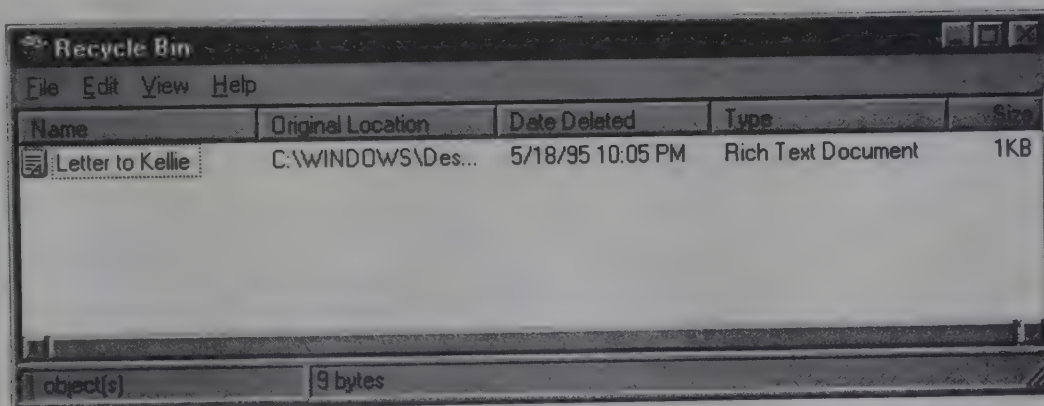


Figure 3.5 The Recycle Bin.

The objects shown in the list in the Recycle Bin window are the objects that have been deleted. In this example, the Recycle Bin has only one object. You can drag that object to the desktop or to a folder on the desktop or into an open window. When you do, the deleted object leaves the Recycle Bin and is no longer deleted.

You can empty the Recycle Bin by choosing **Empty Recycle Bin** selection on the File menu. You'll learn about such menus in Chapter 6, but if you haven't already used menus in other operating systems, I'll bet you can figure them out by yourself by experimenting.

Briefcase

The fourth icon on the desktop in Figure 3.1 is *My Briefcase*. You can put documents in the Briefcase, move the Briefcase to a diskette or to your laptop

across the network, and take these documents on the road to work with them away from your desktop system. When you bring them back, the Briefcase updates the original copies. Chapter 14 explains how the Briefcase works.

THE FOCUS

If you have been following along with your PC, you have several windows displayed on the desktop. Each window represents an independently running program. Later, when you are running concurrent applications, each application will be represented by a separate window on the desktop.

Only one window at a time is interacting with you, the user. That window is said to *be active* or to *have the focus*. Usually the last window you open has the focus. A window with the focus displays on top of the others, has a dark blue border, and receives the keystrokes that you type.

Switching between Windows

To switch the focus to a different window by using the mouse, click anywhere in the window that is to receive the focus. To switch with the keyboard, hold the **Alt** key down while you press and release the **Tab** key. A window opens up with a set of icons and a window title text box. The text box has the title of the next window to receive the focus, and the icon of that window is surrounded by a blue box. Keeping the **Alt** key pressed, press and release the **Tab** key several times. Watch the blue box move and the title text change. When the desired window is indicated, release both keys. The window you selected now has the focus.

CLOSING WINDOWS

If you have been following along with your PC, you still have several windows displayed on the desktop. To close them and make them disappear, click the small box with the X in the upper-right corner of the window. To close the windows from the keyboard, press **Alt+F4** for each window that you want to close.

PUTTING NEW OBJECTS ON THE DESKTOP

You can add objects to the desktop by dragging and dropping them from other locations or by creating them on the desktop. I'll show you here how to create a new folder, put a new document on the desktop, and put a shortcut to a printer on the desktop.

Folders

Folders on the desktop can contain other folders, documents, applications, and shortcuts to devices such as printers. To add a folder to the desktop, move the mouse cursor to an empty spot on the desktop and press the right mouse button. The menu shown in Figure 3.2 pops up. Click the **New** command. The cascaded menu shown in Figure 3.6 pops down. The items listed below the divider in the cascaded menu will vary depending on the applications installed on your system.

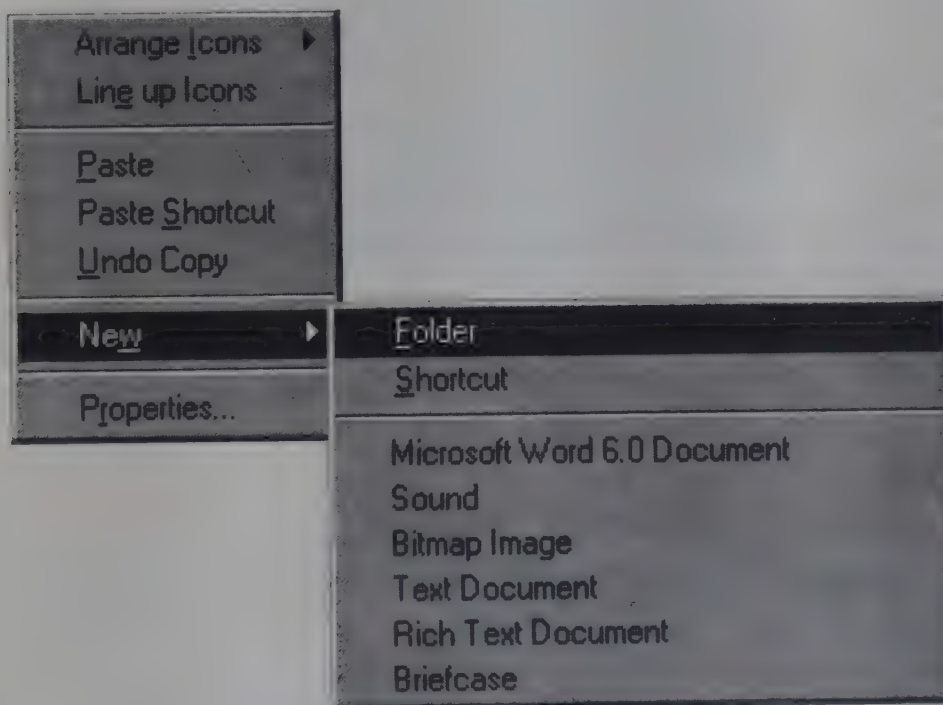


Figure 3.6 The desktop's New menu.

Click the **Folder** command. A folder icon labeled New Folder appears on the desktop. Its label is selected. Type the label you want for the folder and press **Enter**. Drag the folder to a convenient place on the desktop.

You have just added an empty folder to the desktop. Figure 3.7 shows part of the desktop with the new folder added.



Figure 3.7 New folder on the desktop.

Documents

Documents are the data files that you work with. Word processing documents, spreadsheets, database files, graphics, and so on are documents. To add a new document to the desktop, open the menus shown in Figure 3.6 the same way you opened them to add a folder to the desktop. The list of document types below the separator line reflects the associations of document types to applications.

Click on the **Text Document** selection. A folder icon labeled New Text Document appears on the desktop. Its label is selected. Type the label you want for the document and press **Enter**. Figure 3.8 shows the desktop with a new document.

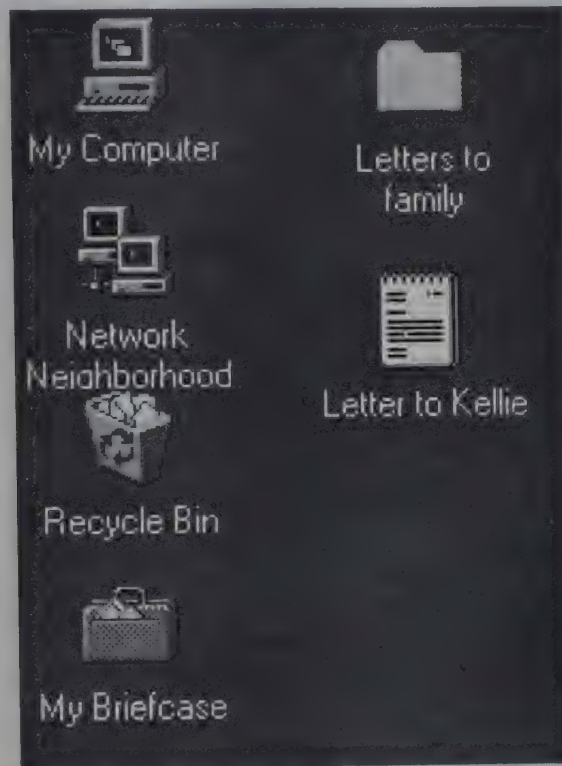


Figure 3.8 New document on the desktop.

Chapter 5 explains how to put data into the document and how to organize documents and folders into folders.

Printers

You can put a *shortcut* to a printer object on the desktop. Printers are installed in the Printers folder under My Computer on the desktop, as Figure 3.3 shows. To view the installed printers, open that folder by double-clicking it. Figure 3.9 shows the Printers folder with one printer installed.

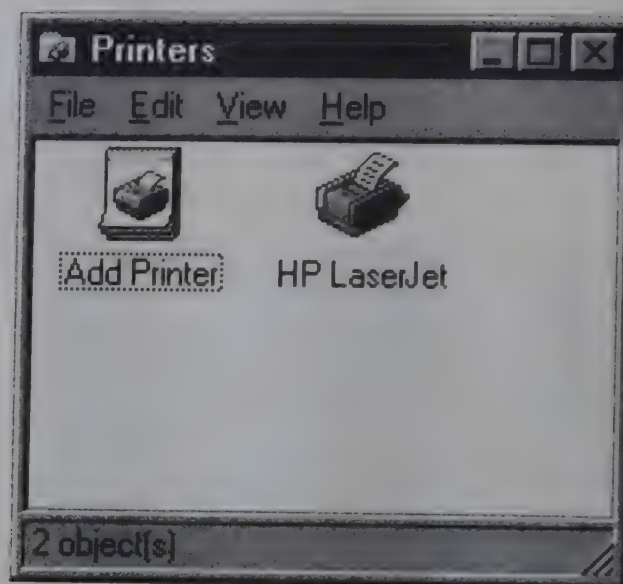


Figure 3.9 The Printers folder.

The Printers folder in Figure 3.9 contains two objects. The Add Printer object opens a wizard application with which you add printers to your configuration. We'll discuss that process in Chapter 9. The second icon in Figure 3.9 represents an HP LaserJet printer connected to my PC. Your Printers folder would contain one or more icons labeled to represent the printers on your PC—assuming you have a printer. Microsoft Fax will also appear in this box if you installed it along with Windows 95 even if you haven't yet set it up.

You can print a document by dragging and dropping it onto a printer icon. Sometimes it is more convenient to have the printer icon on the desktop instead of opening the Printers folder every time you print. If you drag and drop the specific printer icon to the desktop, you will see the dialog box shown in Figure 3.10.

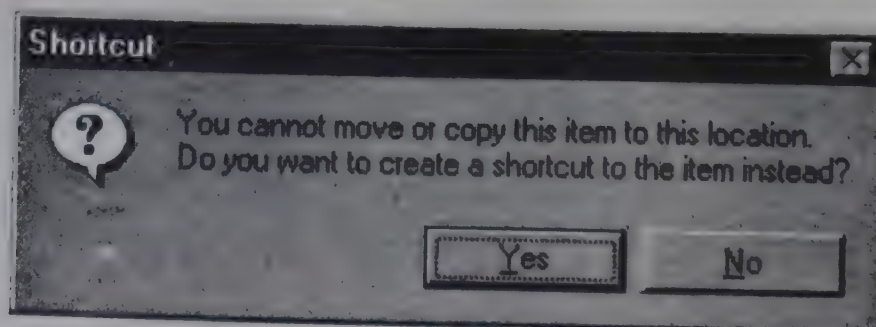


Figure 3.10 Shortcut dialog box.

Choose **Yes**. This action puts a shortcut to the printer on the desktop. Figure 3.11 shows the desktop with the shortcut added.



Figure 3.11 A shortcut to the printer.

Chapter 10 discusses printing from applications in more detail.

Applications

You can put a shortcut to an application on the desktop. Most applications are document-oriented, and you access them mostly through documents that you maintain in folders and on the desktop. Some applications are not launched by documents, however. An example is a communications program that you use to call on-line services and bulletin boards. If you use such an application frequently, you might want to put a shortcut to it on the desktop. I'll show you how to do that soon.

Before you can add an application shortcut to the desktop, you have to find the application, and you haven't learned how to do that yet. We'll finish the discussion of objects on the desktop and then learn how to use the **Find** operation through the Start menu. After that, we'll find an application to add to the desktop.

RENAMING ICONS

When you created the folder and document earlier in this chapter, you renamed them as soon as you created them. You were able to do that by typing the new name as soon as you created the objects because their icon labels were already selected.

To rename an existing icon, you must select its label. Select the object by clicking it. Now click on the label. Allow enough time between those clicks so that they do not get processed as a double click. The label's text is selected, and the keyboard cursor moves into the label area. Type the new label.

TASKBAR

The long horizontal bar at the bottom of the desktop in Figure 3.1 is the *taskbar*. The taskbar contains three elements: the Start menu button; buttons for open windows, which Figure 3.1 does not show; and the time of day indicator at the right end of the taskbar. Figure 3.1 also shows a power indicator, which you see only if you are running Windows 95 on a laptop with power management features. Your taskbar may also show a volume control button to the left of the time.

Start Menu

The **Start** button opens the Start menu. Click the **Start** button. The Start menu pops up as shown in Figure 3.12.

The Start menu contains three kinds of selections: commands, cascaded menus, and dialog box selections.

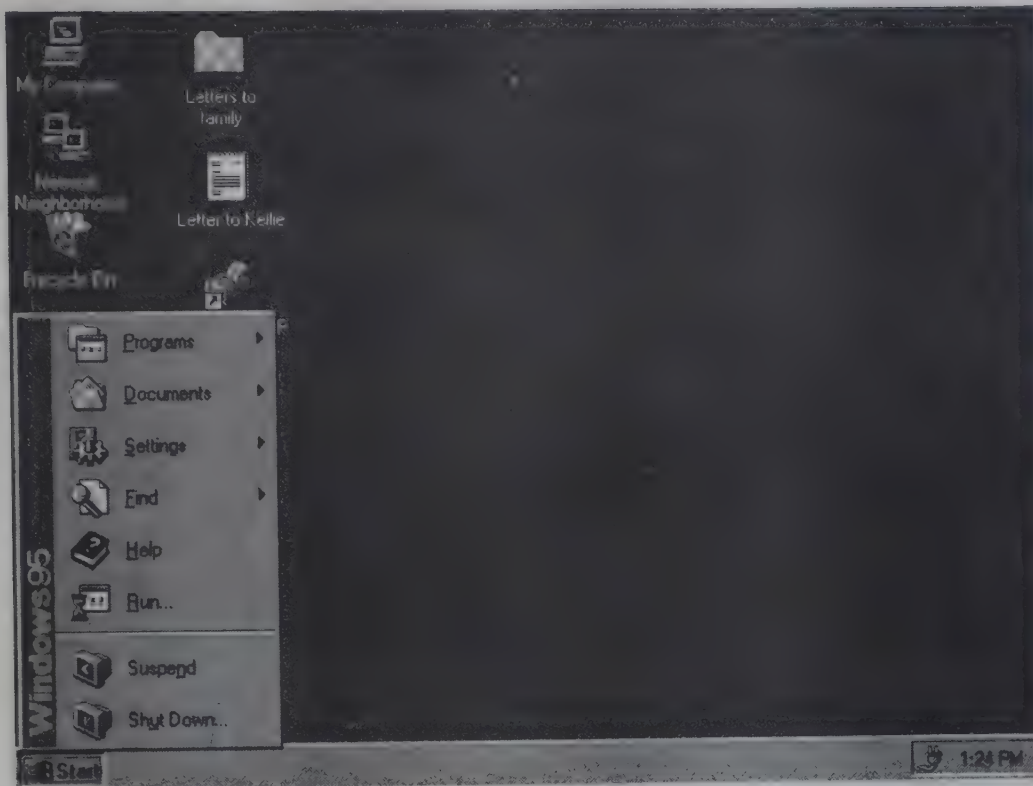


Figure 3.12 The Start menu.

Command Selections

Command selections run applications programs immediately. The **Help** and **Suspend** commands in Figure 3.12 are command selections. Your PC might not have a **Suspend** command; that command is for PCs with an auto-resume feature such as is found on most contemporary laptops.

Cascaded Menu Selections

Selections with the small arrow next to the label pop down cascaded menus. Click on one of those commands and see the menu that pops down next to the selection. Windows 95 uses this method to implement hierarchical menus. Cascaded menus can contain the same three selection types that the Start menu contains.

Dialog Box Selections

Menu selections with three dots (...) next to the label open dialog boxes. The **Run** and **Shut Down** selections are dialog box selections.

Window Buttons

The middle section of the taskbar is for buttons that represent open windows on the desktop. When you opened the My Computer window, the Printers window, and so on, you might have noticed that buttons were added to the taskbar. One of these buttons seems to be pushed in. The others are popped out. The pushed button represents the window that has the focus. If you click on the desktop or the **Start** or time buttons, all the window buttons are popped out because no window will have the focus. If you click on a popped-out button, its window gets the focus. Figure 3.13 shows a desktop with several windows open and a taskbar full of buttons.

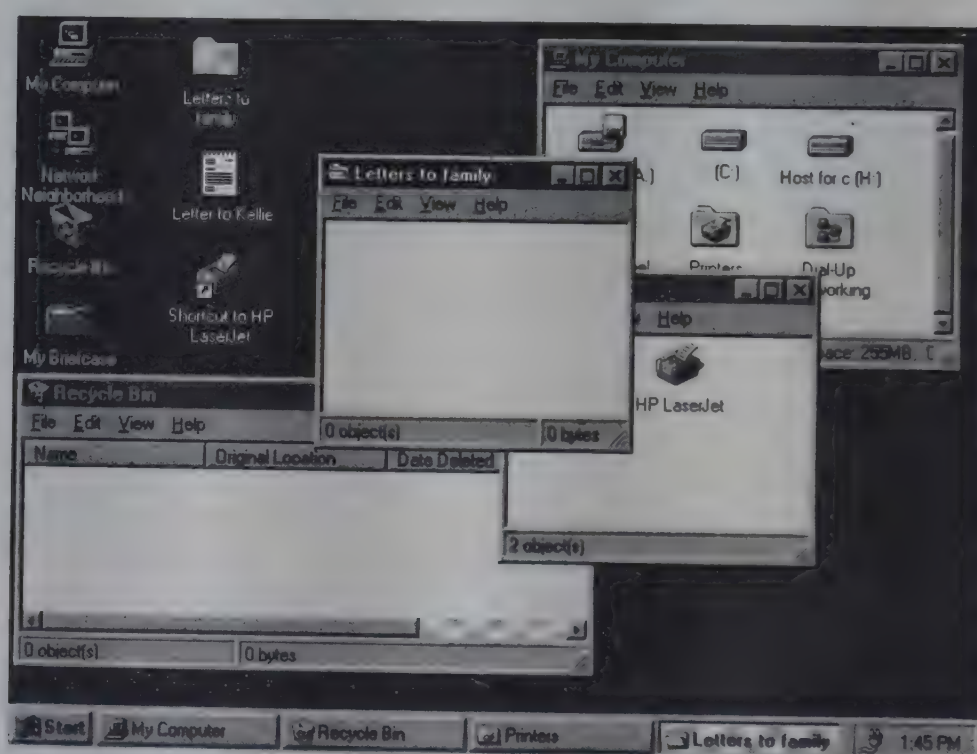


Figure 3.13 Buttons on the taskbar.

Time

The time button at the extreme right end of the taskbar lets you constantly view the time of day. You can view the date by clicking the button. You can set the date and time by double-clicking the button, which opens the Date/Time Properties dialog box shown in Figure 3.14.

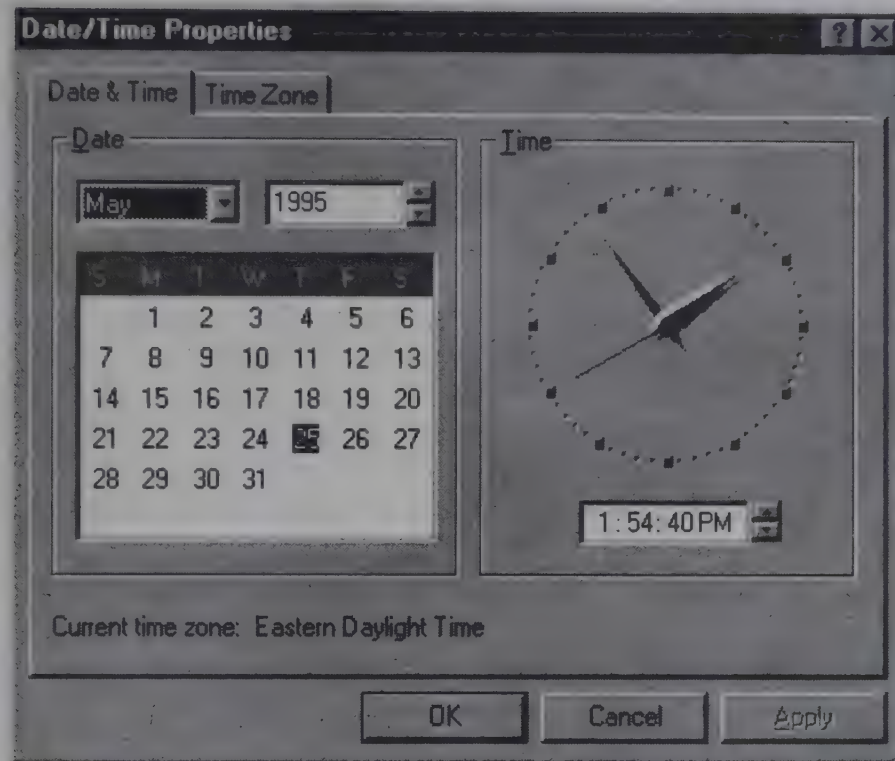


Figure 3.14 Date/Time Properties dialog box.

You used the Date/Time Properties dialog box during installation to set the time zone. This view of the dialog box sets the date and time. The tabs in the upper-left corner of the dialog box select the view. Try it now. Click on the **Time Zone** tab. Click the **Cancel** button when you are finished viewing the dialog box.

Moving the Taskbar

When a lot of windows are open, the taskbar isn't long enough to hold all the window buttons. You can move the taskbar to a vertical position by dragging and dropping it. Click on an empty spot on the taskbar, drag to the right edge of the desktop, and drop the taskbar. Figure 3.15 shows the desktop with the taskbar positioned vertically on the right. You can move the taskbar to the top and left side of the desktop in a similar manner.

You can hide the taskbar, if you like. Click the **Start** button and choose **Settings** from the menu. Then choose **Taskbar**. When the Taskbar Properties dialog box appears, choose **Auto hide**. The taskbar will then be hidden during normal operation; when you want to display the taskbar, simply move the mouse pointer to the bottom edge of the desktop.

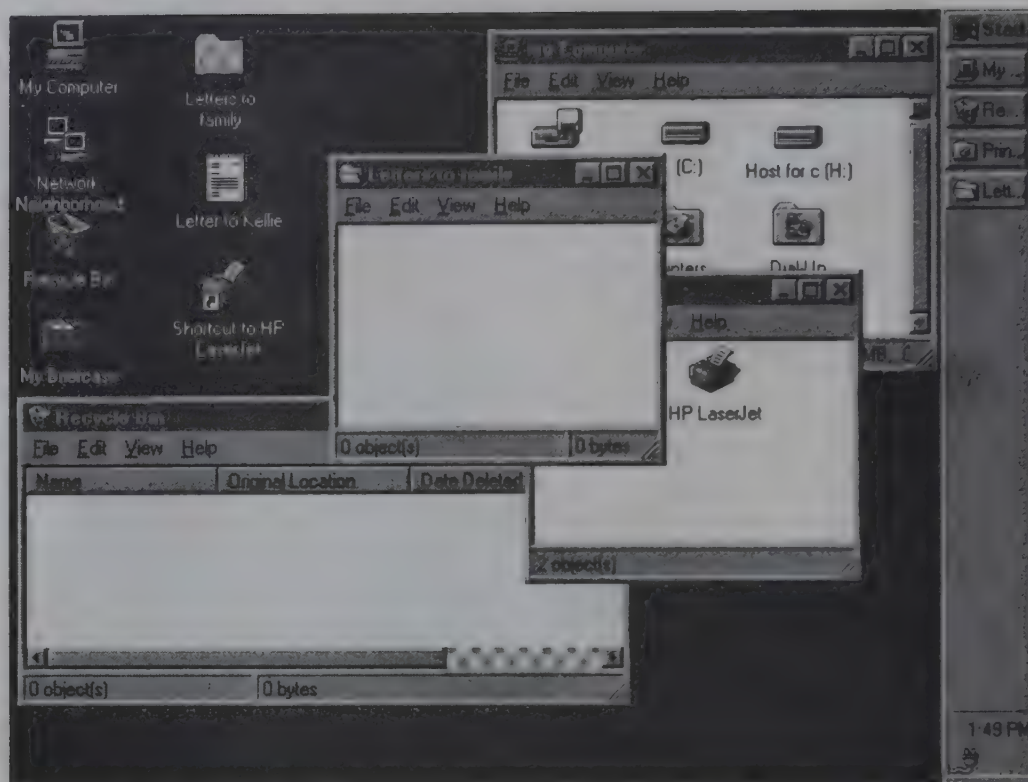


Figure 3.15 Moving the taskbar.

FINDING THINGS

Now we will use the Start menu to choose a command that lets us find something. Recall that we delayed the discussion about putting an application on the desktop until we could find an application.

For this exercise, we'll put the Calendar application on the desktop. Click the **Start** button to open the Start menu. Choose the **Find** command. Choose the **Files or Folders** command from the cascaded menu. You will see the Find dialog box shown in Figure 3.16.

We are looking for the Calendar application. I happen to know that its application file is named **calendar.exe**. That's a good guess anyway, so type *calendar* in the text box next to the *Named* label. Choose the **Find Now** command. After some searching of your hard disk, the dialog box looks like Figure 3.17.

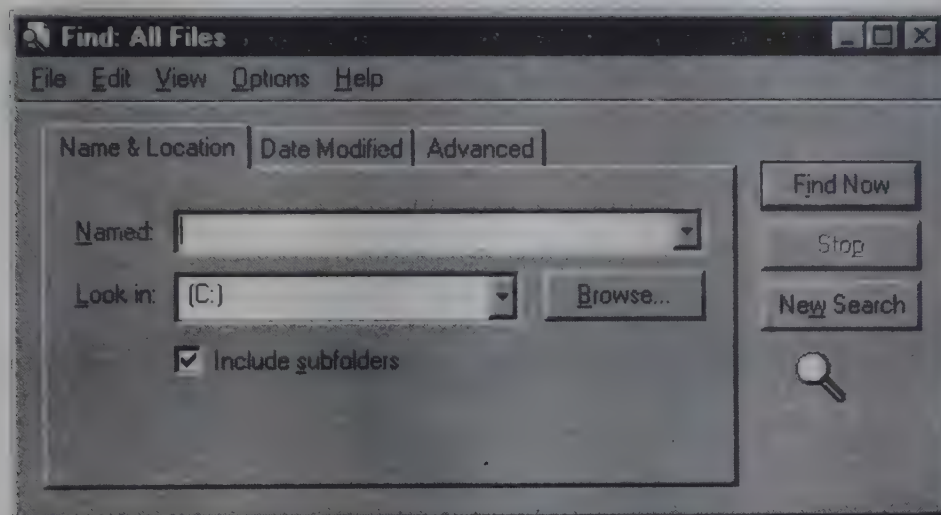


Figure 3.16 The Find dialog box.

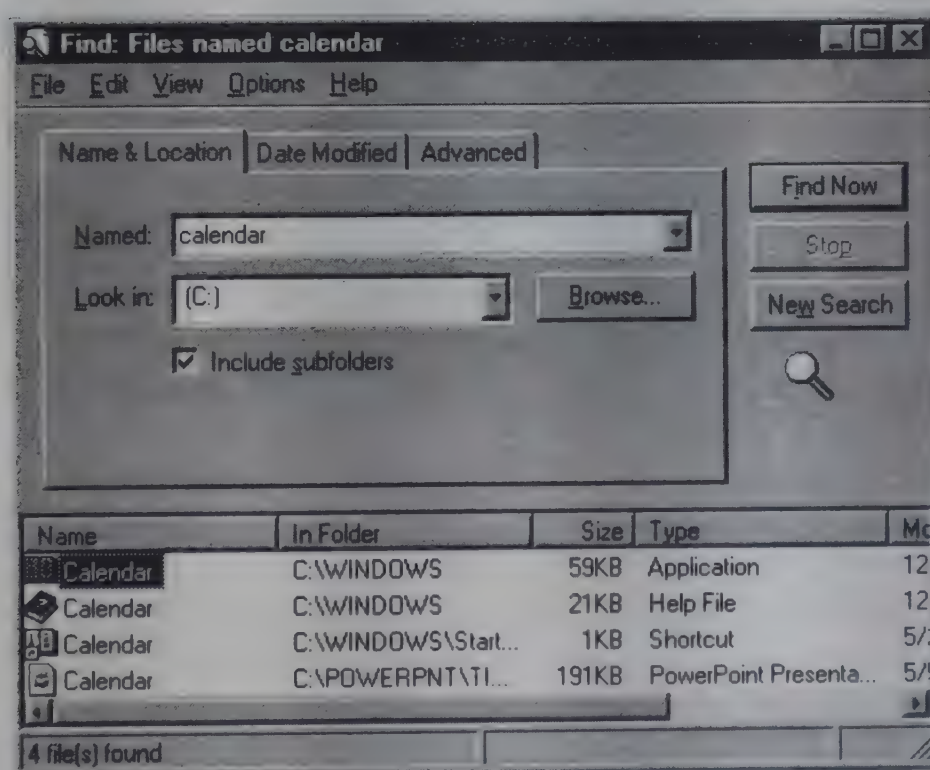


Figure 3.17 Finding a calendar.

You know that you are looking for the Calendar application, and the Find dialog box found it among several other files named *Calendar*. How do you know which “Calendar” is the Calendar program? Look in the Type column. The Calendar application file is the one we’re looking for.

The original reason for looking for the Calendar was to put it on the desktop. You do that by dragging and dropping the first Calendar entry (from the list in the Find: Files dialog box) to the desktop. Figure 3.18 shows the desktop with the Calendar application added.



Figure 3.18 Calendar on the desktop.

Now you can run the Calendar application at any time by clicking its icon.

EXPLORER

The Explorer is a much-improved version of the File Manager application in previous versions of Windows. The Explorer provides a hierarchical view of the resources of your computer. You can run Explorer from any of several places. One way is by right-clicking the **My Computer** icon and choosing the **Explore** command from the menu. The Explorer application starts, as shown in Figure 3.19.

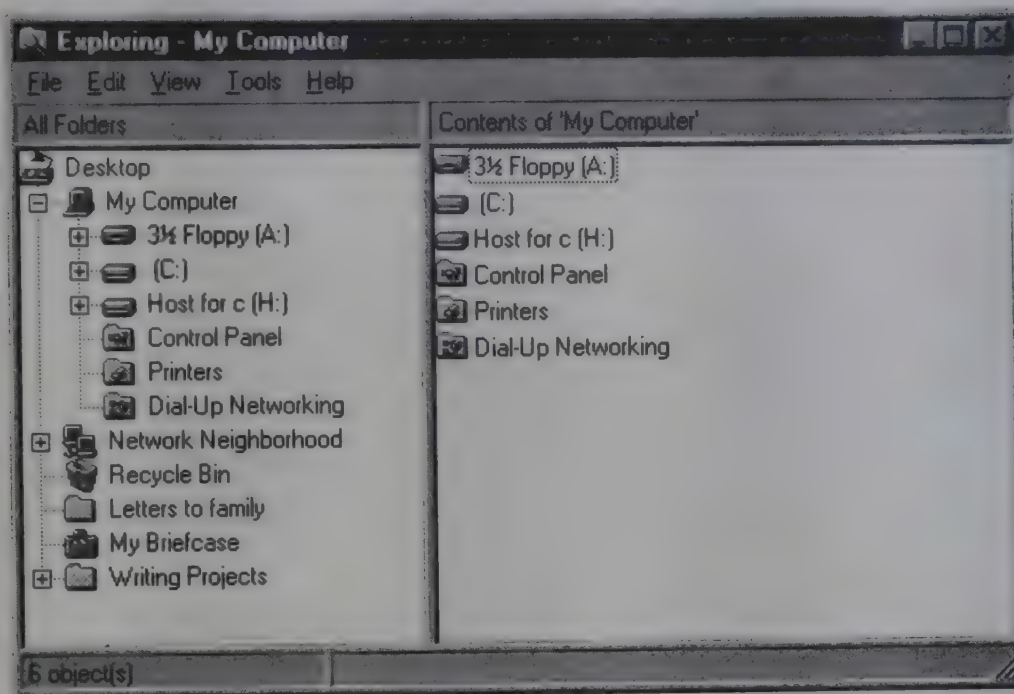


Figure 3.19 The Explorer.

The left pane of the Explorer window shows the hierarchy of folders that constitutes your computer's organization. The right pane shows the contents of the currently selected folder. Because you launched Explorer from the **My Computer** icon, the right pane shows the contents of the My Computer folder. You can select different objects in the left pane and change the display in the right pane accordingly. The small boxes with plus characters next to the icons in the left pane indicate that there are other objects subordinate to the marked object, but the subordinate objects are not displayed. You can click the plus mark to expand the tree to display the subordinate objects. The plus mark changes to a minus mark when the tree is expanded. Clicking the minus mark collapses the tree so that it is no longer expanded at that point.

You can launch applications from the Explorer by double-clicking icons for the applications or double-clicking icons for documents associated with the applications. Double-clicking a folder is the same as clicking its plus or minus mark.

If you double-click an icon for an object that has not been installed—**Dial-up Networking**, for example—its setup wizard application starts up.



CHAPTER 4

Working with Windows

This chapter is about the *window*, the basic unit of display for Windows 95, and all its applications. Later chapters discuss the operation of the applications and the contents of the various kinds of windows. This chapter is about user operations that are common to all windows. You will learn about:

- Window components
- Moving windows
- Resizing windows
- Minimizing, maximizing, and restoring windows

WHAT IS A WINDOW?

A window can represent a folder on the desktop, a running program, or a document or dialog box in a program. Windows 95 uses folders to represent subdirectories in the MS-DOS file system. A program can be an application, one of the Windows 95 utility programs, or a Windows 95 accessory. Document windows display the data and files that programs operate on. A document window is subordinate to the program window—also called the *parent* window—that owns the document. Dialog boxes are interactive windows with which Windows 95 and applications communicate with you. You learned about folders in Chapter 3. Chapter 5 discusses documents; Chapter 6 discusses applications and dialog boxes. Chapter 7 discusses several of the accessory programs.

THE FORMAT OF A WINDOW

Figure 4.1 shows the Notepad accessory program window, with the standard window components labeled. Notepad is a text editor that you can use for text documents that need no special formatting such as fonts and variable typeface sizes. Chapter 7 discusses accessory programs and describes the Notepad in more detail. You'll use the Notepad window here and the Calculator accessory window later to learn the format and behavior of windows in general.

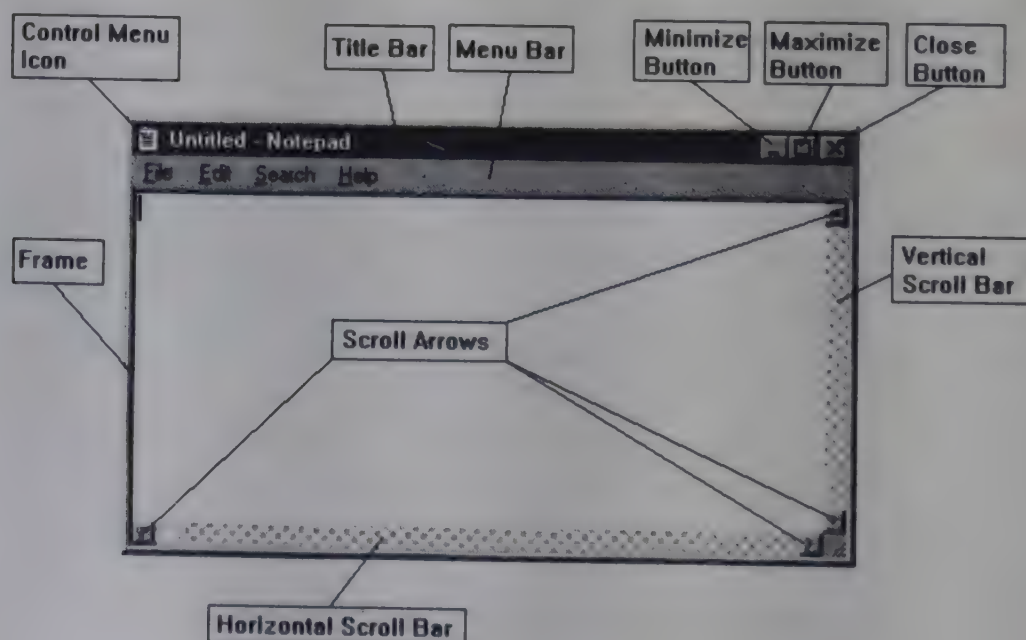


Figure 4.1 Components of a window.

To open the Notepad accessory program, click the **Start** button, choose the **Programs** command from the Start menu, choose **Accessories** from the cascaded menu, and choose **Notepad** from the second cascaded menu. Now you can use your PC to follow along with the exercises in this chapter.

Title Bar

The *title bar* displays the title associated with the window and indicates by its color when the window has the focus. It is also the means for moving the window—when you point the mouse cursor to the title bar and drag the mouse, you move the window. When a window cannot be moved, it has no title bar. You'll learn several ways to move a window later in this chapter. Click somewhere on the Desktop outside the Notepad to see what happens when it loses the focus. Click inside the Notepad to return the focus to its window.

Frame

The *frame* surrounds the window. When you point the mouse to one of the frame edges or corners, the mouse cursor changes to an arrow cursor with points at both ends, indicating that the window can be resized. Dragging that cursor changes the size of the window. You'll learn several ways to resize a window later in this chapter.

Control Menu

Each window has a *control menu*, which contains commands for manipulating the window. You open a window's control menu by clicking the icon in the upper-left corner of the window, by right-clicking the title bar, or by pressing **Alt+Spacebar** for program windows and **Alt+Hyphen** for document windows. Figure 4.2 shows the control menu for the Notepad program window.

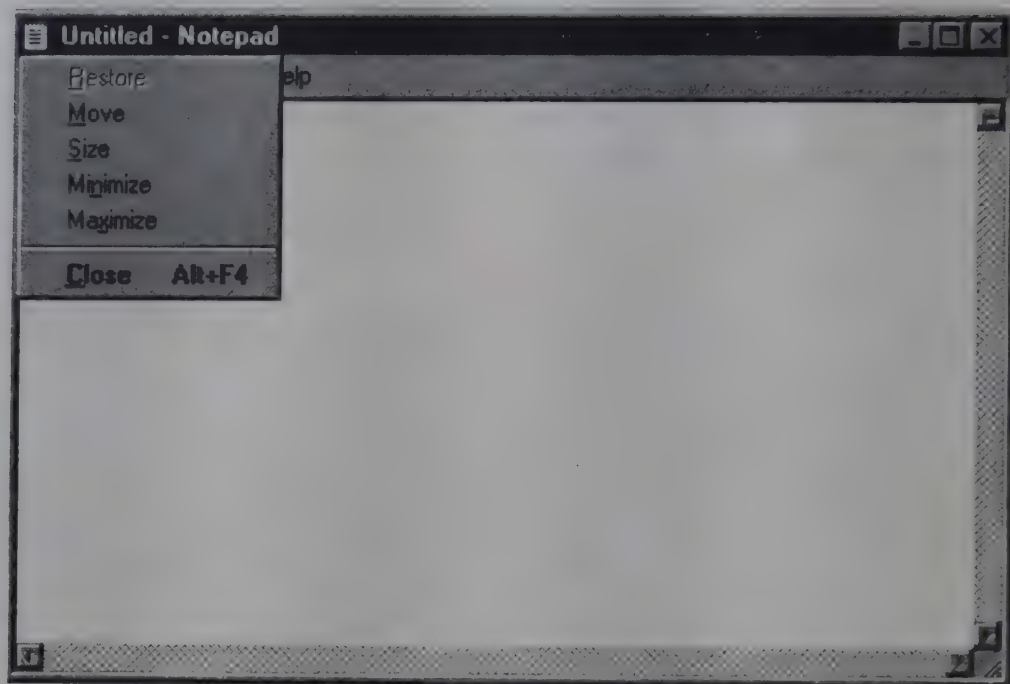


Figure 4.2 The Notepad control menu.

You'll learn how to use the control menu later in this chapter.

Menu Bar

Most application windows have a *menu bar*, which contains the titles of pull-down menus. These titles vary from application to application, but standards exist. For example, most applications have File, Edit, and Help menus. Chapter 6 discusses the use of menus.

Work Space

The *work space* is that portion of a window that is inside the frame and under the title bar and menu bar. This space is also called the *client area*. The window displays renditions of its data and documents in the work space.

Minimize and Maximize Buttons

A window can be in one of three configurations with respect to its size and placement. The window can be *maximized* which means that it fills the desktop or parent window's work space completely. The window can be *minimized*, which means that it is represented by a short title bar at the bottom of the parent window's work space or as a but-

ton on the Taskbar. The window can be *restored*, which means it is returned to its former size.

You can change the window's configuration by clicking the **Minimize** and **Maximize** buttons in the upper-right corner of the window. There are other ways to do the same things. You'll learn how these operations work later in this chapter.

Restore Button

When a window is maximized, its **Maximize** button is replaced by a **Restore** button. When the window is minimized, its **Minimize** button is replaced by a **Restore** button.

Close Button

Clicking the **Close** button closes the window. This button is an alternative to using the **Close** command on the control menu. Users of Windows 3.1 need to be careful of the **Close** button. It is positioned where the **Maximize** button was positioned in Windows 3.1. The X icon in the **Close** button is similar to the X shortcut key for the **Maximize** command on the control menu. Everything about the **Close** button makes you want to use it to maximize a window until you get accustomed to the new usage. It is particularly confusing to people who routinely switch between Windows 95 and Windows 3.1 or Windows NT. Many previewers and beta testers suggested that Microsoft change the feature before Windows 95 was released, but Microsoft remained steadfast in its position that the **Close** button is OK the way it is implemented.

Help Button

Some windows have a **Help** button in the button group in the window's upper-right corner. A **Help** button has a question mark icon. When you click the **Help** button, the mouse cursor changes to a pointer with a question mark. Then, when you click an item in the window, the system displays helpful information about that item. Chapter 8 discusses the Windows 95 Help system.

Scroll Bars

Often, the display of data in the window's work space extends beyond the area covered by the window. A word processing document is usually much longer than the space displayed by the window. Graphics pictures and many text files can be wider than the window. To view the hidden data, you must be able to scroll the window horizontally and vertically. The horizontal and vertical scroll bars allow you to do this using the mouse.

MOVING WINDOWS

Sometimes a window gets in the way. Sometimes you cannot see what you need to see on a window that is underneath the one with the focus. You could give the hidden window the focus, but that might not be what you need. Sometimes you need to keep the current active window in focus while you look at the contents of another window. One way to do this is to move the active window out of the way.

Let's open some windows for practice. If you still have the Notepad accessory application window open from the earlier discussions, leave it open. If not, open it. Using the same procedure that you used to open the Notepad accessory application, open the Calculator accessory application. Figure 4.3 shows about what your desktop looks like with these two application windows open.

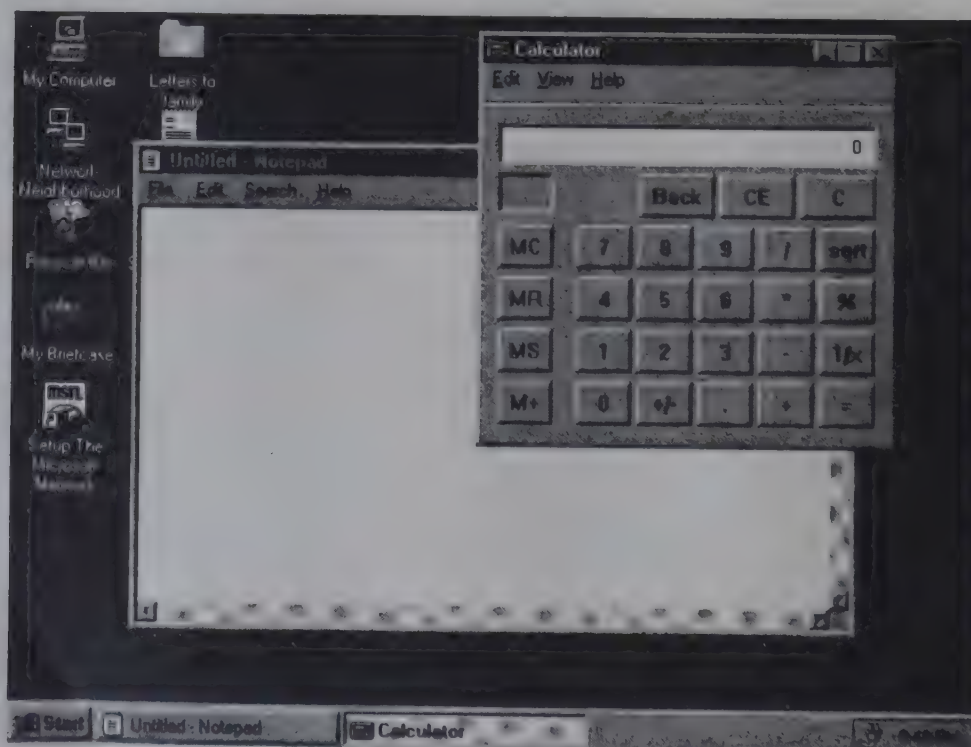


Figure 4.3 Desktop with two open applications.

Moving Windows with the Mouse

You can move a window by dragging and dropping it by its title bar. Move the mouse cursor to the title bar of the Calculator window, press and hold down the left button, and move the cursor in the direction you wish to move the window. An outline of the Calculator window moves along with the cursor. When the outline appears where you want the window to be, release the mouse button. The Calculator window now displays in its new location.

Moving Windows with the Keyboard

Set the focus to the Calculator by clicking somewhere in the Calculator window. Press **Alt+Spacebar** to open the Calculator's control menu. Press the **M** key. A four-pronged arrow cursor appears. Use the arrow keys to move the window horizontally and vertically. As you press the keys, an outline of the window follows where the window movement will be. When the outline appears where you want the window to be, press the **Enter** key. The Calculator window now displays in its new location. If you decide instead to leave the window where it was, press the **Esc** key before you press the **Enter** key.

RESIZING WINDOWS

You can change the size of windows that have frames. The Calculator does not have a frame and so its size is fixed. This is usually the case with dialog boxes, too. The Notepad window has a frame, so it can be resized.

Resizing Windows with the Mouse

Move the mouse cursor to the right side of the Notepad window's frame. The cursor changes to a right-left pointing arrow. Hold the mouse button down and drag the cursor to the right and left. A rectangle describes the new window width dimensions. When the width is the way you want it, release the button, and the window displays with its new size.

You can do the same thing with the left side, top, and bottom of the window frame, compressing and expanding the window on all sides. The size cursor for the top and bottom of the frame is an up-down pointing arrow.

When you point the cursor to one of the corners of the window, the cursor changes to a 45-degree two-headed arrow, and you can stretch or compress the window on two axes at once.

Resizing Windows with the Keyboard

Press **Alt+Spacebar** to display the control menu for the Notepad window. Press the **S** key to choose the **Size** command. The four-headed arrow cursor appears in the middle of the window. Press one of the four arrow keys to select whether you are going to move the top, the bottom, or one of the sides. The right-left or up-down pointing cursor appears on the part of the frame you selected. You can use an arrow key to change the position of the selected part of the frame, or you can use an arrow key to point to a corner where the slanted cursor takes over.

SCROLLING THE WORK SPACE

When a document window's document is bigger than the work space that displays the document, the document must be scrolled. If the document is wider than the work space, the document scrolls horizontally. If the document is longer than the work space, the document scrolls vertically.

You can scroll documents with the mouse if the document window includes scroll bars. The Notepad application has scroll bars, but they are disabled when you start the program with no text data. Take some time now and type text into the Notepad. Write a letter, a memo, a poem, or lines of gibberish. Press **Enter** before you get to the right margin of each line of text. Stop typing when you have typed text on every line of the Notepad and you are at the bottom line. Figure 4.4 shows Notepad with some text that I typed into it.

The scroll bars in Figure 4.4 are inactive. Their scroll arrows are displayed dimly and they have no scroll buttons. The longest line of text does not go past the right margin of the window's work space, and the number of lines in the poem does not exceed the height of the work space.

Place the mouse cursor on the lower-right corner of the Notepad window and drag the window's size up and to the left so that the right edge of the work space is less than the width of the longest line of text and the bottom of the work space is above the bottom line of text. Figure 4.5 shows how my Notepad text window looks after I resize the window that way.

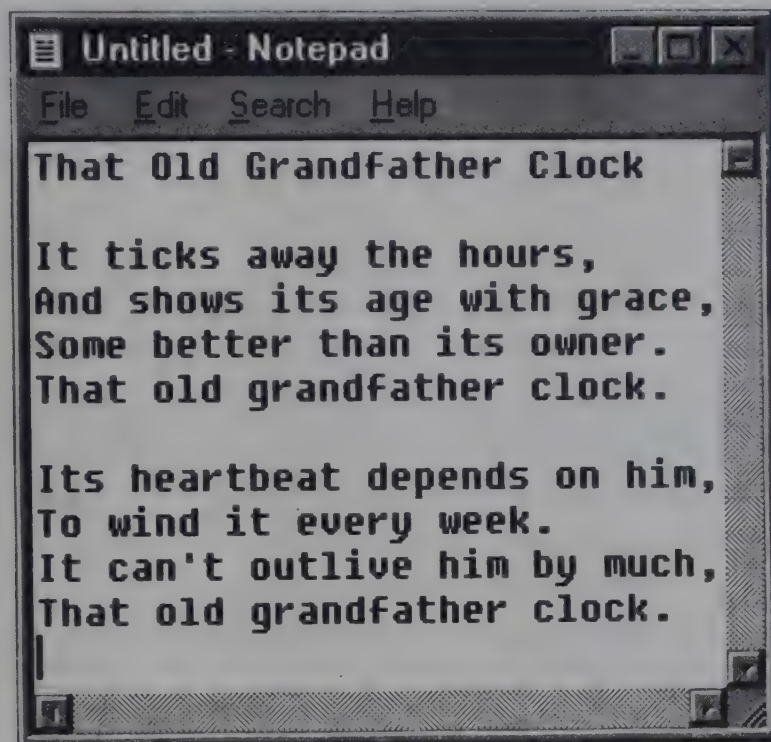


Figure 4.4 Text in the Notepad.

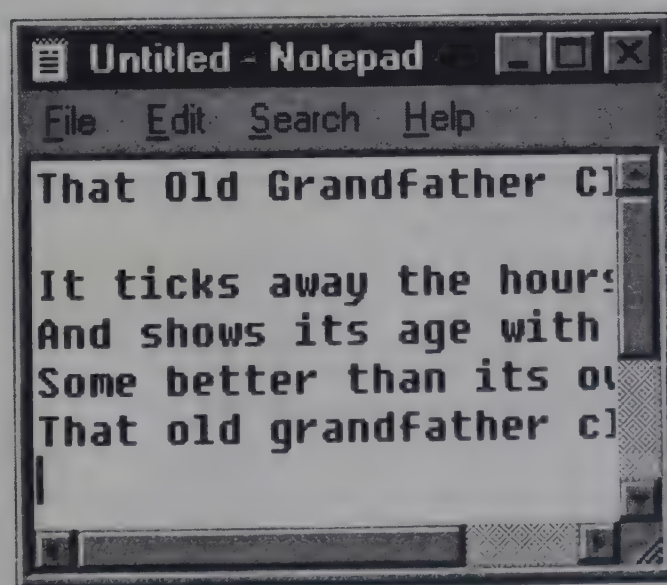


Figure 4.5 Notepad resized.

The scroll bars and their scroll arrows are displayed more sharply now, and they have *scroll boxes*. The sizes of the scroll boxes depict the percentage of the total document that is visible. These scroll boxes are also called *thumbs*. You

can now scroll the Notepad window both horizontally and vertically because both scroll bars are enabled and have scroll boxes.

Scrolling with the Mouse

To scroll the window's work space up, move the mouse cursor to the down-pointing scroll arrow in the vertical scroll bar. Press the left mouse button and hold it down. The window's work spaces scroll up, and the scroll box moves downward.

To scroll the window's work space to the left, move the mouse cursor to the left-pointing scroll arrow in the horizontal scroll bar. Use the same procedure to scroll horizontally that you used to scroll vertically.

You can use the cursor to drag a scroll box along its travel. The scroll box moves in increments that are proportional to the length or width of the work space.

You can page with the mouse by pointing the mouse cursor just ahead or after the scroll box in the scroll bar and clicking to scroll forward or back one page of text.

Scrolling down and to the right works the same way as scrolling up and to the left.

Scrolling with the Keyboard

Use the arrow keys to scroll a window in any of its four directions. Use the **PgUp** and **PgDn** keys to page through the work space vertically, and use **Ctrl+PgUp** and **Ctrl+PgDn** to page horizontally. The scroll boxes move along with your keyboard scrolling and paging operations.

MINIMIZING AND MAXIMIZING WINDOWS

Recall the three configurations of a window: restored, minimized, and maximized. The Notepad and Calculator windows that we used for moving, resizing, and scrolling are both in the restored configuration. We'll use these windows to practice restoring, maximizing, and minimizing.

Maximizing Windows with the Mouse

The **Maximize** button in the upper-right corner of the Notepad window contains a full-screen window icon indicating that the window is in its restored configuration and can be maximized. Click the **Maximize** button. The window expands to occupy the entire desktop, and the **Maximize** button changes to a **Restore** button with a two-window icon, as shown in Figure 4.6.

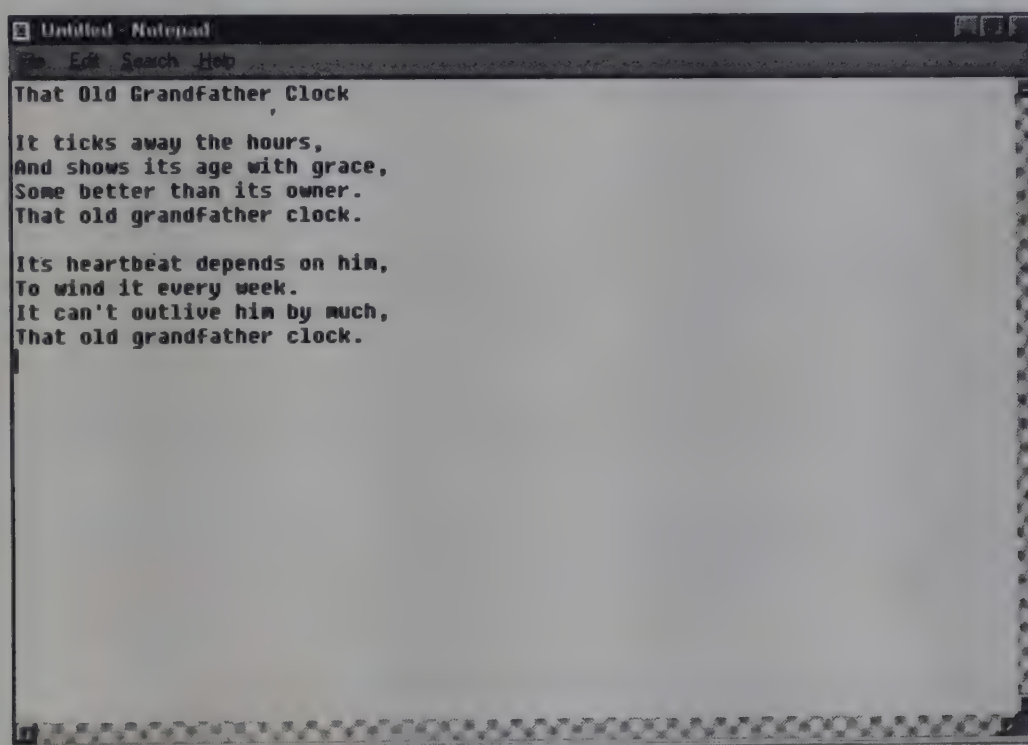


Figure 4.6 A maximized window.

Restoring Maximized Windows with the Mouse

Click the **Restore** button on the Notepad window. The window returns to the size and location it had before you maximized it.

Minimizing Windows with the Mouse

Click the **Minimize** box in the Notepad window. This box is the one with the underscore icon in the upper-right corner button group. The Notepad window collapses into its button on the Taskbar.

Note that the title of the **Notepad** Taskbar button is the same title that was in the Notepad window's title bar. In this case, the poem file is untitled because it hasn't been saved to a disk file and given a name.

Restoring Minimized Windows with the Mouse

Click the **Notepad** Taskbar button. The button expands the Notepad window to return to the display shown in Figure 4.5.

Maximizing Windows with the Keyboard

From the display shown in Figure 4.5, press **Alt+Spacebar**. This command displays the control menu for the Notepad window. Press the **X** key to choose the **Maximize** command from the Notepad window's control menu. The window expands to occupy the entire desktop as shown in Figure 4.6.

Restoring Maximized Windows with the Keyboard

Press **Alt+Spacebar** to open the Notepad's control menu again. Choose the **Restore** command by pressing **R**. The Notepad window gets the focus in its restored configuration as shown in Figure 4.5.

Minimizing Windows with the Keyboard

Press **Alt+Spacebar** to open the Notepad's control menu again. Press the **N** key to choose the **Minimize** command. The Notepad window collapses into its button on the Taskbar.

Restoring Minimized Windows with the Keyboard

Hold down the **Alt** key and press and release the **Tab** key until the Notepad's icon is selected. Then release the **Alt** key. The Notepad window is restored to the configuration shown in Figure 4.5 and is given the focus.

DOCUMENT WINDOWS

The exercises in this chapter until now have concentrated on application program windows. Program windows, folder windows, and dialog box windows behave alike with respect to the operations that this chapter discusses. Document windows in an

application, however, behave differently in some respects when the application supports more than one document at a time. Such applications are said to have a *multiple document interface* and are called MDI applications.

You can move, resize, minimize, maximize, and restore document windows in an MDI application. You can switch the focus from an application window to one of its document windows and from document window to document window.

None of the Windows 95 accessory and utility programs is an MDI application. I built an MDI demo application for Chapter 6 to demonstrate the behavior of document windows in an MDI application.

OTHER STANDARD WINDOW PARTS

You will learn about other standard window parts as the book proceeds. Dialog boxes have many different kinds of controls. Some application windows include toolbars and status bars. These window parts are explained when the book discusses the programs that use them.



CHAPTER 5

Working with Documents

This chapter is about documents, the collections of information that computer users work with. Windows 95 supports a *document-centric* work environment with documents on the desktop and in folders, with drag and drop operations to move documents, and with automatic launching of applications from documents. You will learn about:

- Documents in folders
- Folders in folders
- Launching applications from documents
- The Document menu
- Quick View

A DOCUMENT-CENTRIC WORK ENVIRONMENT

Windows 95 changes the way that most people work with their computers. Traditionally, computer users used the application as their main focus. They ran applications to create, modify, and distribute documents and files. Most Windows 3.1 users operate their systems from the Program Manager, which organizes programs into groups. You open the Program Manager group, launch the application, and then select the document to work on from within the application.

Windows 3.1 allows you to work from the File Manager, but the user interface is not intuitive, and nothing in Windows 3.1 supports the concept of folders and other objects on the desktop.

Windows 95 redirects your focus to the documents themselves. You organize documents on the desktop and in folders, and Windows 95 launches applications when you select documents to work on.

DOCUMENTS IN FOLDERS

Users often leave documents on the desktop to work with them, but to keep the desktop from being cluttered they organize documents not being currently used into folders. Recall from Chapter 3 that you added a folder and a document to the desktop. You can drag and drop the new document into the new folder. Then, when you open the folder by double-clicking its icon, you see the letter in the folder as shown in Figure 5.1.

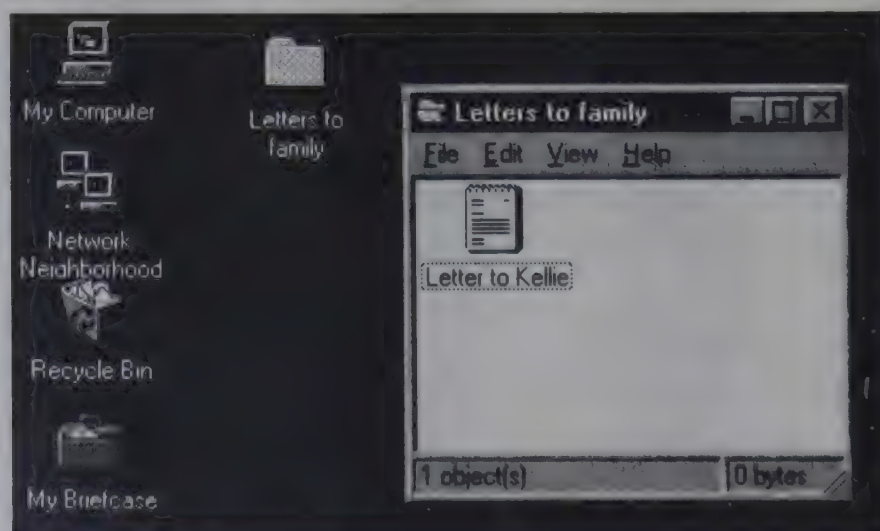


Figure 5.1 A letter in a folder.

FOLDERS IN FOLDERS

You can also put folders into folders by dragging and dropping. This practice allows you to organize your work hierarchically. For example, I have a folder on my desktop labeled *Writing Projects*. That folder contains folders for each of my current writing projects. These folders contain the documents related to each project—the word processing files, notes, memos to my editor, illustrations, schedules, and so on. A folder for a more complex writing project might contain folders for the chapters. A folder for a project involving several people might contain a separate folder for the work of each of the team members.

PUTTING DATA INTO DOCUMENTS

The new letter document in the new folder is empty. In Chapter 3, we created the new folder, created the new document, and moved the document into the folder. To put data into the document, we launch the application that is associated with the type of the document. The document was automatically associated with the Windows 95 Notepad accessory application. You used Notepad briefly in Chapter 4 to learn about scrolling documents.

To modify the document, double-click its icon. Notepad opens its application window, and you can type a letter as Figure 5.2 shows.

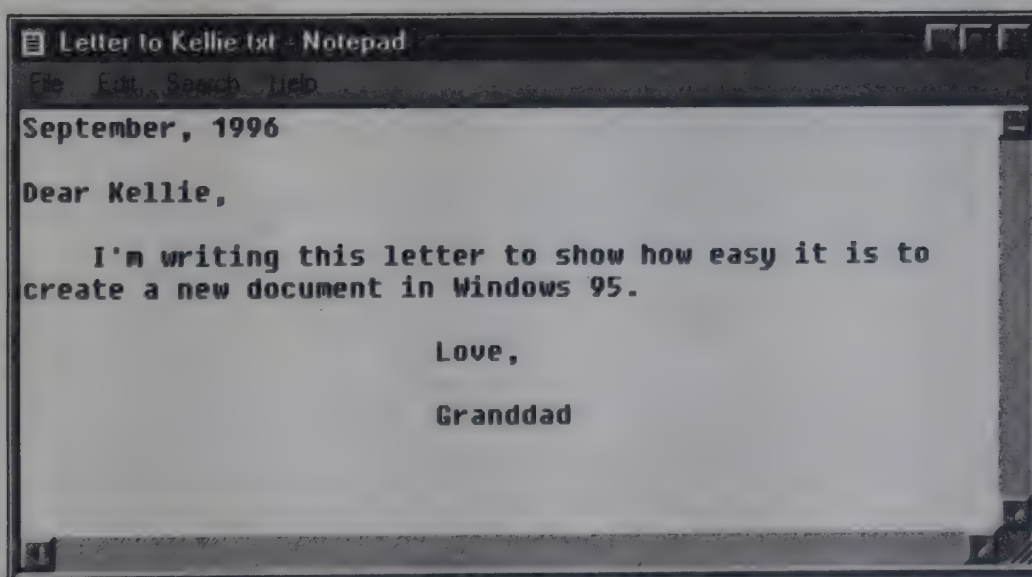


Figure 5.2 Notepad launched.

Assuming that you save the document after entering it into Notepad, each time you double-click the document icon in the folder, Notepad launches with the current document contents. You learn about saving documents in Chapters 6 and 7.

THE DOCUMENTS MENU

Windows 95 maintains a list of documents that you use to launch applications. This list is available on a special Documents menu that you can use to reopen a recently used document. To open the Documents menu, click the **Start** button and choose **Documents**. The Documents menu opens as shown in Figure 5.3.

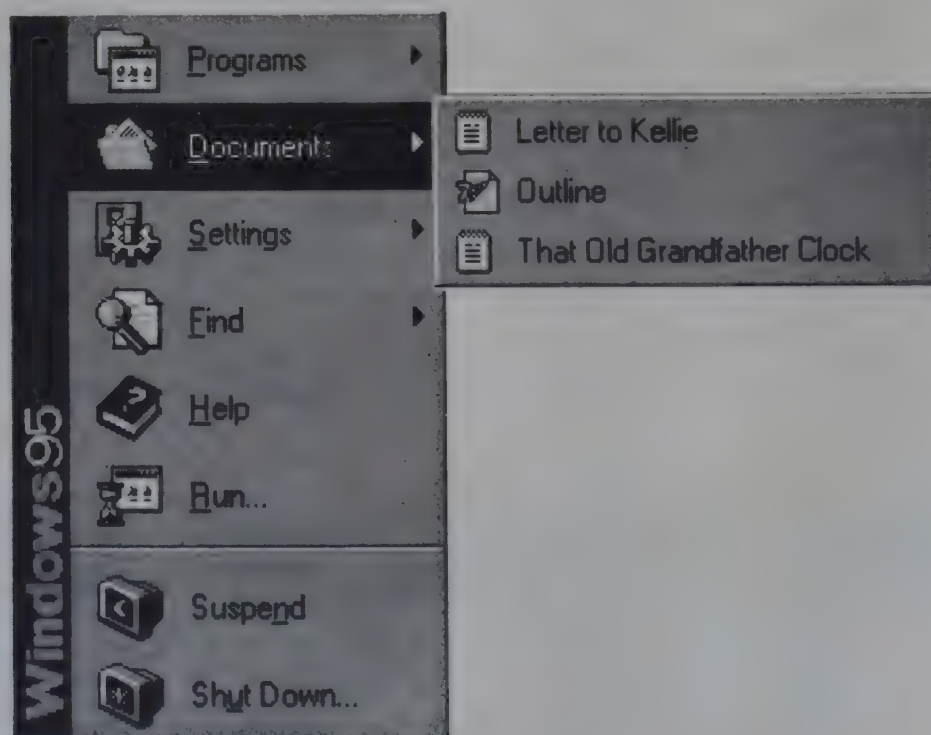


Figure 5.3 Documents menu.

When you choose one of the documents on the Documents menu, the associated application opens and loads the document.

QUICK VIEW

Windows 95 introduces Quick View, a feature that allows you to view the contents of documents without launching the applications that created them.

This feature allows people to share documents when not everyone has the creating applications. For example, one person can create a document by using Word for Windows. Other people who do not use Word for Windows can view that document in their PCs by using Quick View.

Quick View is available only on the CD version of Windows 95 and is not automatically installed with the program. You can add the feature by opening the Control Panel window, double-clicking Add/Remove Programs, clicking the Windows Setup tab, and clicking Accessories. Now click the Details button, and a list of components installed appears. Scroll down the list to Quick View and click it; then click OK. You can get Quick View free of charge from Microsoft's Web site at <http://www.microsoft.com/windows/software.htm>.

You open a Quick View window for a document by right-clicking the document's icon and choosing **Quick View**. The Quick View window opens as shown in Figure 5.4.

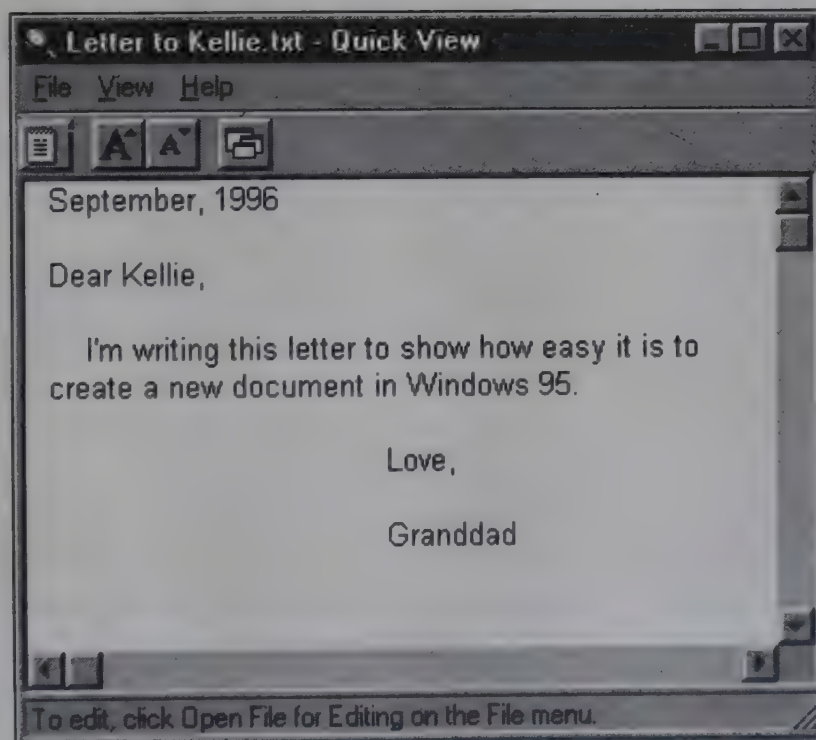


Figure 5.4 Quick View.

You can view the contents of the document by using Quick View, but you cannot modify the document directly from the Quick View application. To modify the document, you can choose the **Open File for Editing** command on the File menu. This command launches the application with which the document is associated.



CHAPTER 6

Working with Applications

Chapter 5 explains how you launch applications from documents. You can also launch applications from the Start menu's **Programs** selection. No matter how you launch an application, once you get into it you have to operate it. Each application has unique properties, but they have a lot in common, too. This chapter describes the common user interface properties that most applications share.

This is an important chapter. All the rest of the book assumes that you understand how to use the Windows 95 common user interface components of an application. You will learn about:

- Menus
- Dialog boxes
- The multiple-document interface
- Toolbars
- Common dialogs
- Data sharing and exchanging

THE PROGRAMS MENU

To launch an application independently of any existing document, click the **Start** button on the desktop and choose **Programs**. You'll see the Programs menu shown in Figure 6.1.

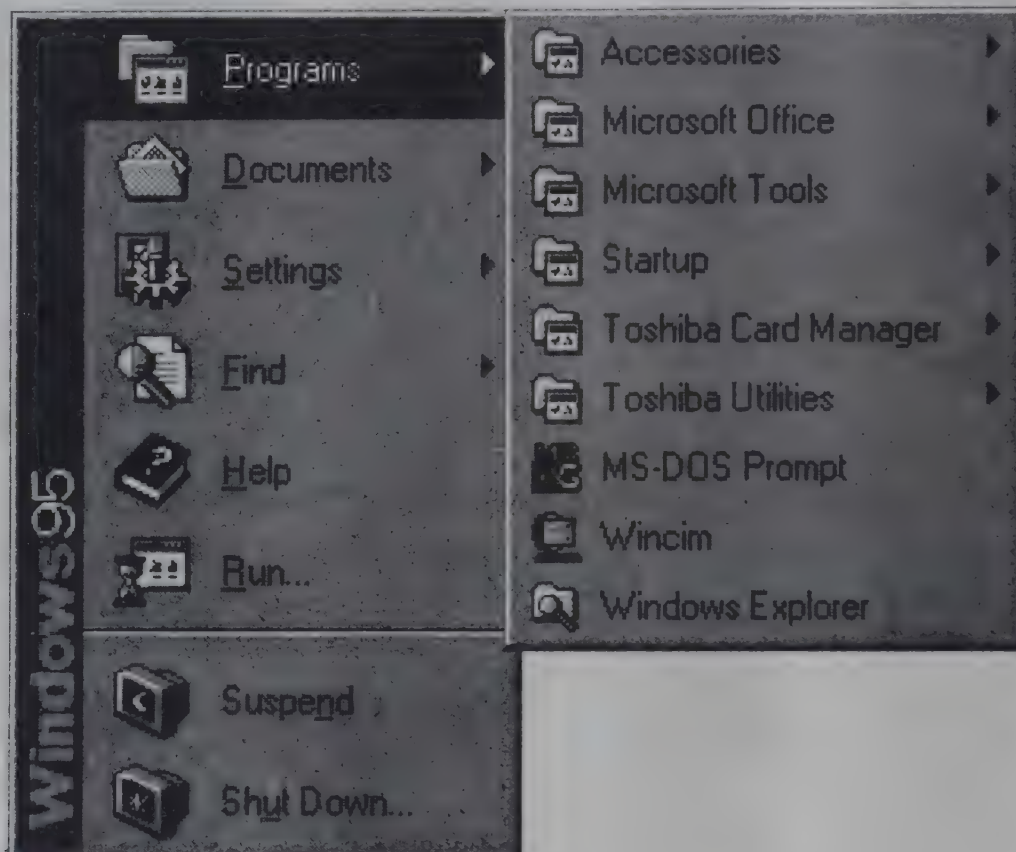


Figure 6.1 The Programs menu.

The Programs menu contains applications to run along with cascaded menu labels. The programs in your cascaded menu will vary from the ones shown here, according to the applications on your system. Each cascaded menu contains a combination of applications and other cascaded menus. For these exercises, we use the WordPad accessory application from the Accessories cascaded menu. Click the **Accessories** label and then **WordPad** to open WordPad. You'll see the display shown in Figure 6.2.

WordPad is a small word processor. You'll learn more about WordPad in Chapter 7. We'll use it here to study the common user interface elements of Windows 95 applications.

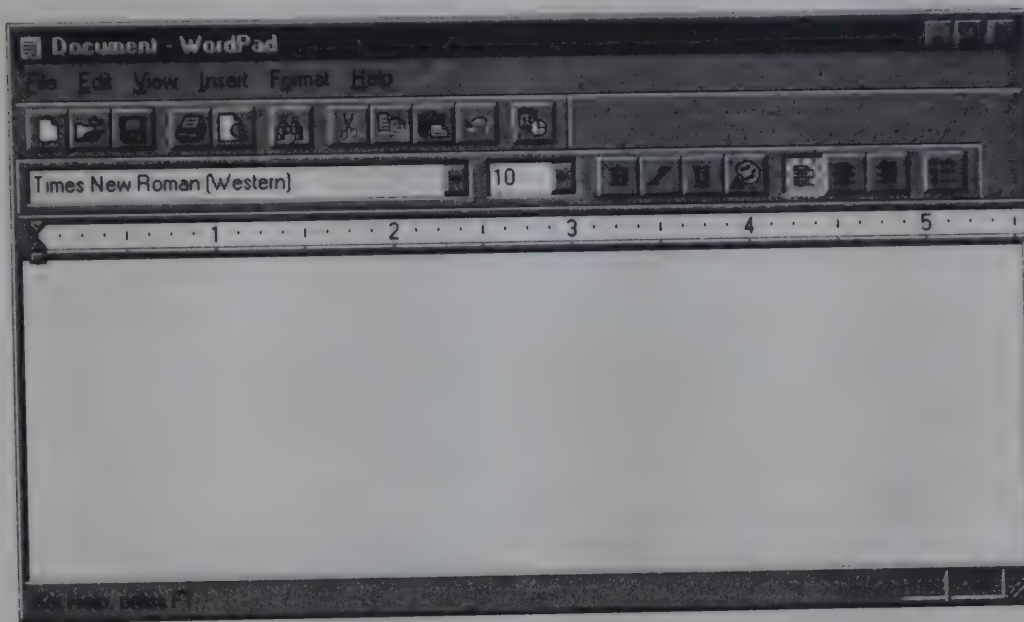


Figure 6.2 The WordPad application.

MENUS

Programs in the Windows 95 environment use menus extensively. The Windows 95 menu architecture is consistent across applications and within the Windows 95 accessory and utility programs.

You have already used Windows menus. The control menu in Chapter 4 is typical of Windows 95 menus, as are the Start menu on the taskbar and the menu that the right-click operation opens for objects on the desktop. Applications and other Windows programs have menus, and they all work in much the same way.

Windows applications usually have a menu bar at the top of the application window just under the title bar. The menu bar provides access to most of the application's user commands.

The Menu Bar

Recall the menu bar described in Chapter 4. Most applications have such a menu bar and standard menu bar labels. WordPad's menu bar in Figure 6.2 is typical. The File, Edit, View, and Help menu bar labels have standard placement and meaning in Windows 95 applications. Many applications display additional menu bars depending on the context of the application.

When you choose a selection on the menu bar, a menu pops down. We'll discuss the most common standard menus, and then we'll get into the several ways you can pop down a menu from the menu bar.

File Menu

The File menu typically contains commands to open and close documents, print documents, open recently used documents, and exit the application. Figure 6.3 shows WordPad's File menu. The numbered selections in the File menu are the most recently used files, so these will be different on your system.

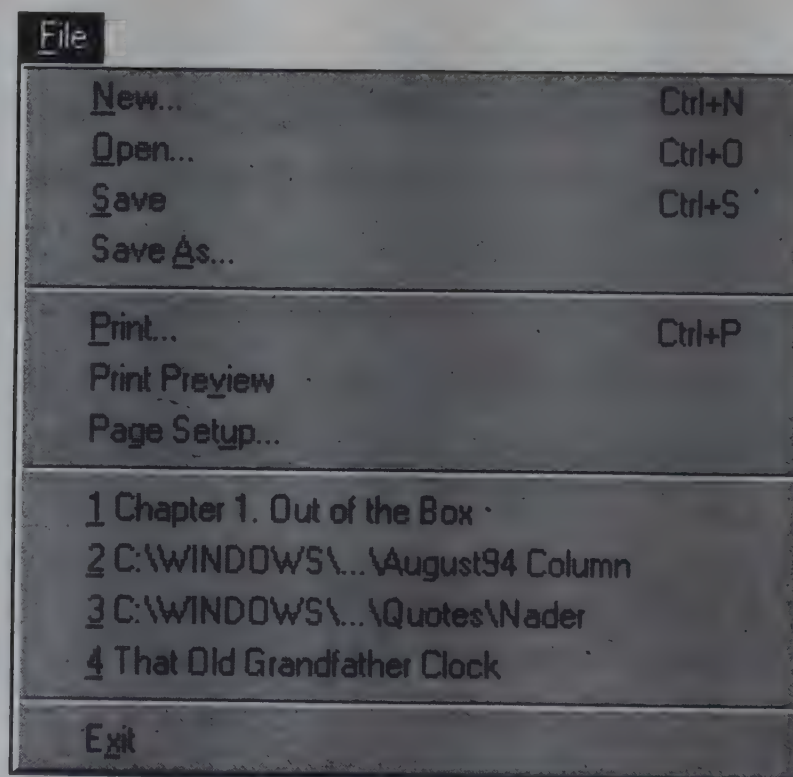


Figure 6.3 The WordPad File menu.

Edit Menu

Applications with text and graphical documents usually have an Edit menu to support cut, copy, and paste operations with the clipboard. The clipboard is discussed later in this chapter. Edit menus often also include commands for searching documents and for search and replace operations. Figure 6.4 shows WordPad's Edit menu.

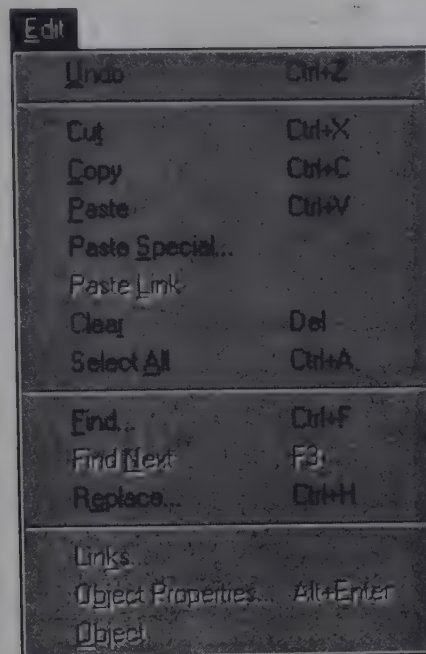


Figure 6.4 The WordPad Edit menu.

View Menu

Applications use the View menu to control the appearance of visible items in the application. People like to have control over how the screen is used. Sometimes you don't need to see everything that an application has to show you, and the View menu provides commands to select and deselect viewing options. Figure 6.5 shows WordPad's View menu.

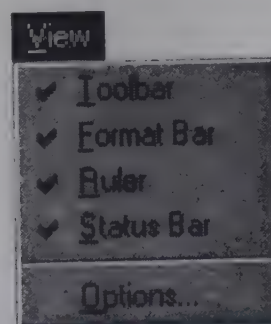


Figure 6.5 The WordPad View menu.

Help Menu

Many applications have a Help menu to provide access to the Windows 95 Help system. Chapter 8 discusses the Help system in detail. Figure 6.6 shows WordPad's Help menu.

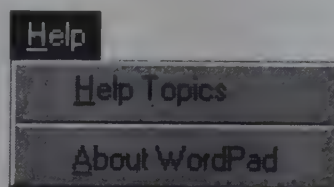


Figure 6.6 The WordPad Help menu.

Menu Actions

Regardless of the nature and content of menus, they all work the same way, with mouse and keyboard commands to navigate the menus and choose from them. There are three menu operations to learn: selecting a menu, moving from menu to menu, and choosing a command from a menu. You can use the menus of the WordPad to learn these operations.

Opening a Common Menu with the Mouse

Move the mouse cursor to the WordPad's work space. Recall that the work space is where the text goes when you type a document. So far, the work space in this exercise is empty. Right-click in the work space to open a menu of common commands. Most Windows 95 applications support this convention. Figure 6.7 shows WordPad's common menu.

Figure 6.7 is a typical menu. A menu contains a list of commands from which you may choose as well as a menu selection cursor, which is a dark bar that extends the length of the selection's name on the menu. Observe the **Object Properties** and **Object** selections. Their font seems embossed and not as prominent as the other selections. This style means that in the current context, the selections are not available to you.

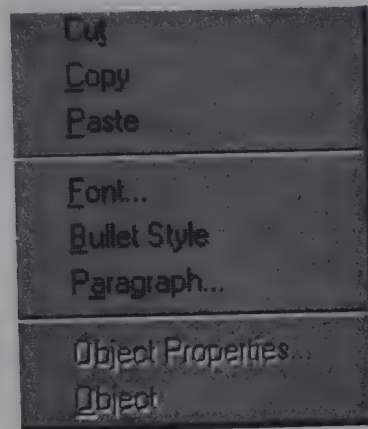


Figure 6.7 A common menu.

Click outside the menu, and we'll practice using menus from the menu bar.

Selecting a Menu with the Mouse

Move the mouse cursor to WordPad's **File** label in the menu bar and click. The File menu pops down. Slide the mouse cursor across the menu bar. As you leave one menu label and move to another, the popped-down menu closes and the new menu pops down.

To close the popped-down menu, move the mouse cursor outside the menu itself and click. Do that now and proceed.

Selecting a Menu with the Keyboard

Each of the menu labels on the menu bar includes an underlined letter. These are the *shortcut keys* assigned to the menu names. Press **Alt+F** to pop down the File menu. To select another menu, press the **Alt+letter** combination given for it. Observe that as soon as you press the **Alt** key, the earlier menu goes away. Use the **Alt** key by itself to exit from the menu bar and go back to the application.

Moving from Menu to Menu

You move from menu to menu with the mouse by selecting the menus individually. The keyboard provides several other ways to navigate the menu system.

Select the File menu again by pressing **Alt+F**. Now press the right arrow key on the cursor keypad. The File menu closes and the Edit menu pops down.

Use the right and left arrow keys to move from menu to menu. In addition to moving among the menus in the Menu bar, these keys move to the application's control menu.

Press the **Alt** key to close the popped-down menu. Now press the **Alt** key by itself again. The label for the File menu is highlighted, but the menu itself does not pop down.

Use the arrow keys to move the label cursor from menu label to menu label. When the cursor is at the label of your choice, press **Enter** to select the menu.

Choosing a Menu Item with the Mouse

Move the mouse cursor to the **File** menu label in the menu bar and click. Move the mouse cursor to the **New** command on the menu and click. You'll see the display shown in Figure 6.8.

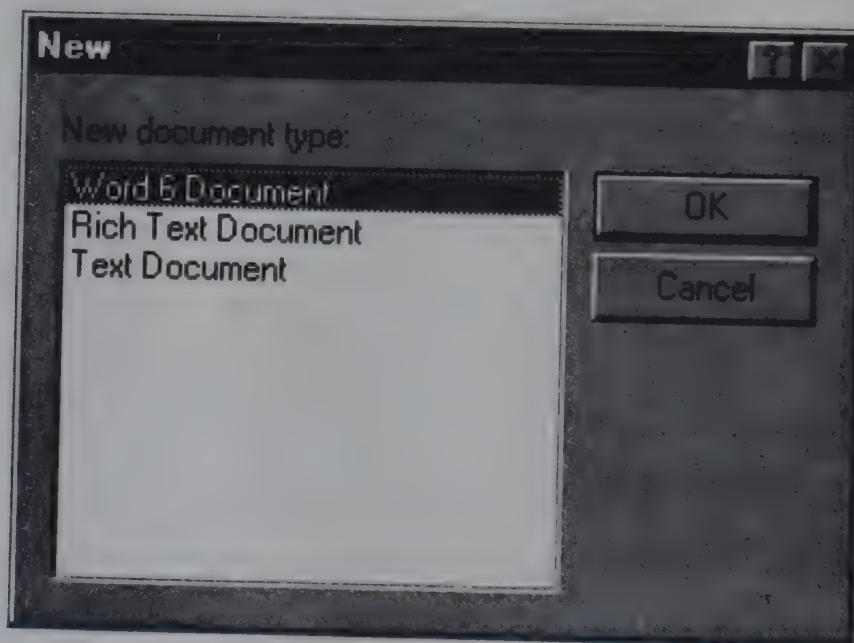


Figure 6.8 After choosing a command.

You just used the mouse to choose a command from a menu. The display shown in Figure 6.8 is the result of that command, a dialog box that lets you specify a document type. You'll learn about dialog boxes later in this chapter. For now, click the **Cancel** button to exit from this process and return to WordPad.

Choosing a Menu Item with the Keyboard

Press **Alt+F** to pop down the File menu. There are several ways to choose a command with the keyboard.

Move the menu cursor to the **New** command on the menu with the down arrow key. Press **Enter** to see the display shown in Figure 6.8.

You just used the keyboard to choose a command from a menu. Press **Esc** to exit from this process and return to WordPad.

Toggle Commands

A *toggle command* has an on-off setting that affects the behavior of the program. You do not execute a program action when you choose the toggle command. Instead, you reverse the setting of the toggle. The program uses the toggle's setting to determine its subsequent behavior.

The first four selections on WordPad's View menu are toggle commands. They have check marks next to their labels to indicate that the toggle is turned on. When you choose one of these commands, the toggle turns off and the menu closes. The application's subsequent behavior is affected by the settings of these toggles. In WordPad's View menu, the toggles control the display of the two toolbars, the ruler, and the status bar.

Commands That Open Dialog Boxes

When you chose the **New** command on the File menu, you opened a dialog box. Commands that have an ellipses (...) following the label open dialog boxes.

Cascaded Menus

If a menu command has an arrowhead next to its title, the command opens a cascaded menu. A cascaded menu pops down alongside the current menu. The cascaded menu aligns itself with the menu command that selected it. WordPad has no cascaded menus, but you have seen several on the desktop's Start menu.

Menu Item Accelerator Keys

Some menu commands have accelerator keys associated with them. An *accelerator key* allows you to execute the command from the keyboard without

opening the menu itself. The first three commands in WordPad's File menu have **Ctrl+N**, **Ctrl+O**, and **Ctrl+S** displayed next to the command labels. These are the accelerator keys assigned to the **New**, **Open**, and **Save** commands. By pressing these keys, you can execute the commands from within the application without opening the menu.

TOOLBARS

A *toolbar* is a set of buttons usually positioned immediately below the application's menu bar. Each button corresponds to a menu command. Clicking the button is the same as choosing the corresponding menu command. A standard configuration of buttons has evolved, and WordPad's toolbar is typical. Figure 6.9 shows WordPad's toolbar and indicates the menu selections associated with each button.

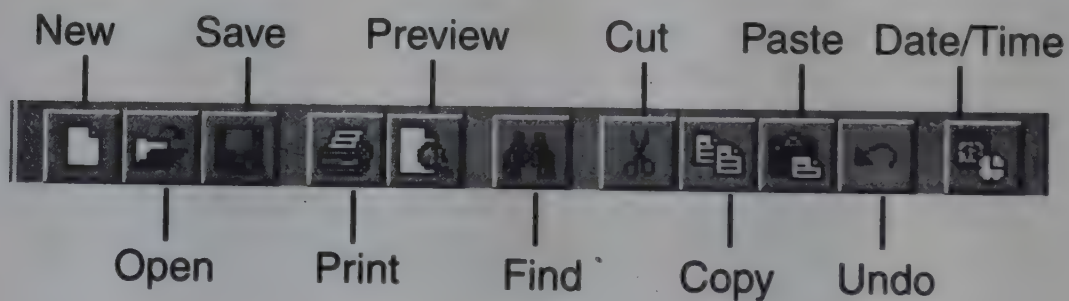


Figure 6.9 A toolbar.

WordPad has a second toolbar called its *format bar*. This application-dependent toolbar is initially positioned immediately below the first toolbar. Not all applications have second toolbars, and not all the items on a second toolbar are tool buttons.

Toolbars are often *floating*, which means that you can move them around on the screen, and *dockable*, which means that you can move them to other edges of the application window the same way you did with the taskbar in Chapter 3. WordPad's toolbar is both floating and dockable; its format bar is floating but not dockable.

Dockable Toolbars

To dock a toolbar to a different edge of the screen, you drag and drop it to the edge. As you drag the toolbar, the empty border being dragged assumes a

rectangular shape. When it gets next to an edge, the border becomes thinner and stretches out to indicate that the toolbar is ready to be docked. Drop the toolbar in place to dock it. Figure 6.10 shows WordPad with the toolbar docked onto the right edge of the application window.

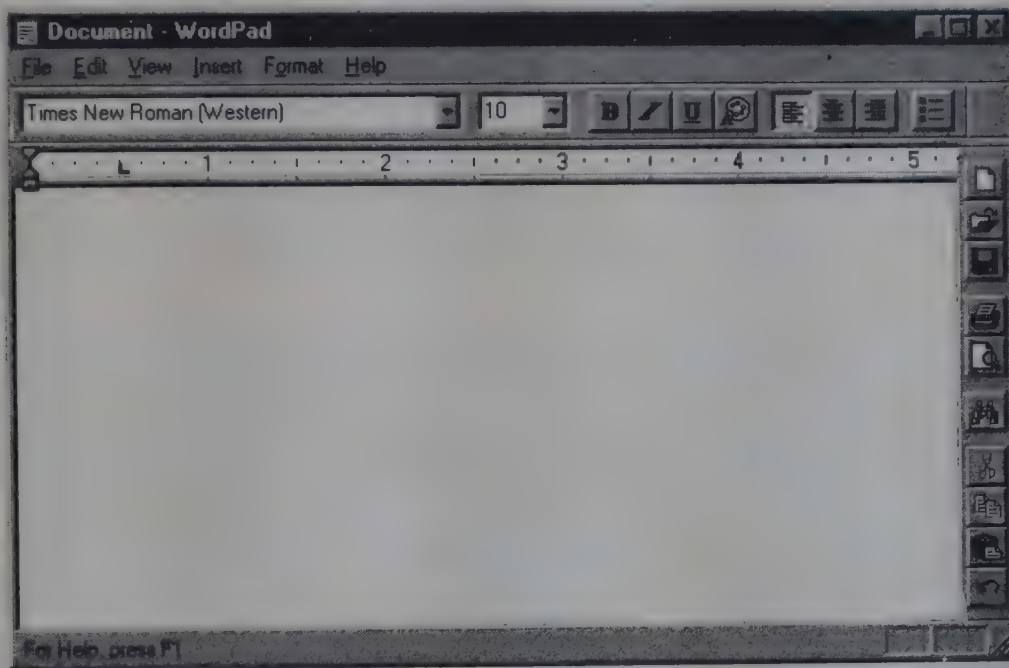


Figure 6.10 A docked toolbar.

Floating Toolbars

To move a toolbar elsewhere on the screen, you drag and drop it. To drag the toolbar, you click in an area of the toolbar that is not occupied by a button. You can float a toolbar completely off the application window if you want to.

Tooltips

If you move the mouse cursor to a button on a toolbar and leave it there for a few seconds, a small yellow tag displays with a terse description of the button's purpose. This tag is called a "*tooltip*."

STATUS BARS

The thick bottom border of the WordPad application window is its status bar. By convention, the status bar displays the message "For Help, press F1" until

you open a menu and select a command by sliding the mouse cursor down the menu or stepping down with the down arrow key. When a menu command is selected, the status bar displays a one-line explanation of the command. Figure 6.11 shows WordPad's status bar with a command selected.

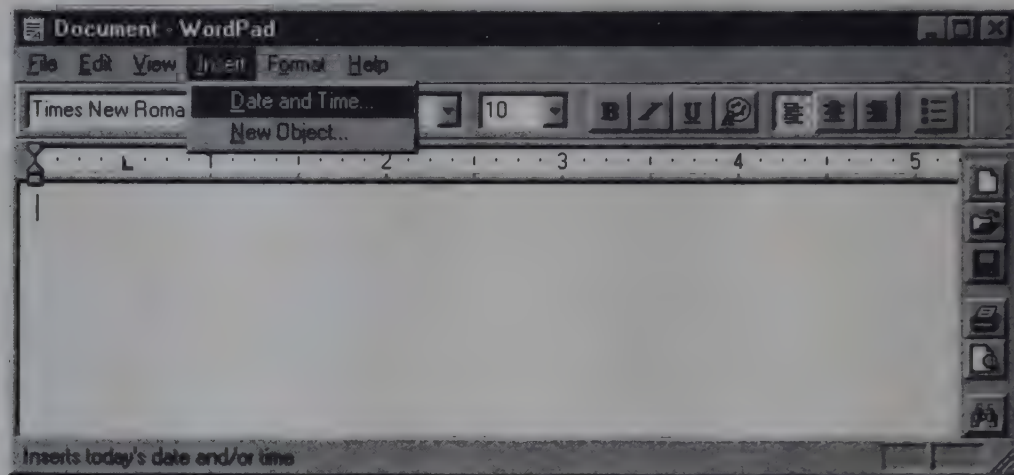


Figure 6.11 The status bar.

WordPad uses the right end of the status bar to indicate the current setting of the **Caps Lock** and **Num Lock** keys.

DIALOG BOXES

Windows 95 programs use dialog boxes for data entry. Dialog box data entry follows common user interface conventions that the dialog box supports. You enter text and select options by using *controls* on the dialog box. Controls are data entry components such as command buttons, radio buttons, list boxes, text boxes, and so on.

Modal and Modeless Dialog Boxes

A *modal* dialog box keeps the focus within the dialog box as long as the box is open. You cannot select another component of the program, such as a menu or toolbar button, while the dialog box is open. You must close the dialog box before the application can proceed. You can tell whether a modal dialog box is open: Clicking outside it in the application that opened it has no effect. You can switch to a different application while the running one has a modal dialog box open, but when you return to the original application, the modal dialog box is still in control.

A *modeless* dialog box allows you to change the focus to other parts of the application without closing the dialog box. A spell check dialog box is one example of a modeless dialog box.

The dialog boxes that we use as examples in this chapter are all modal dialog boxes.

Opening a Dialog Box

Return to the WordPad application. Choose **Options** on the View menu. The **Options** command opens the dialog box shown in Figure 6.12.

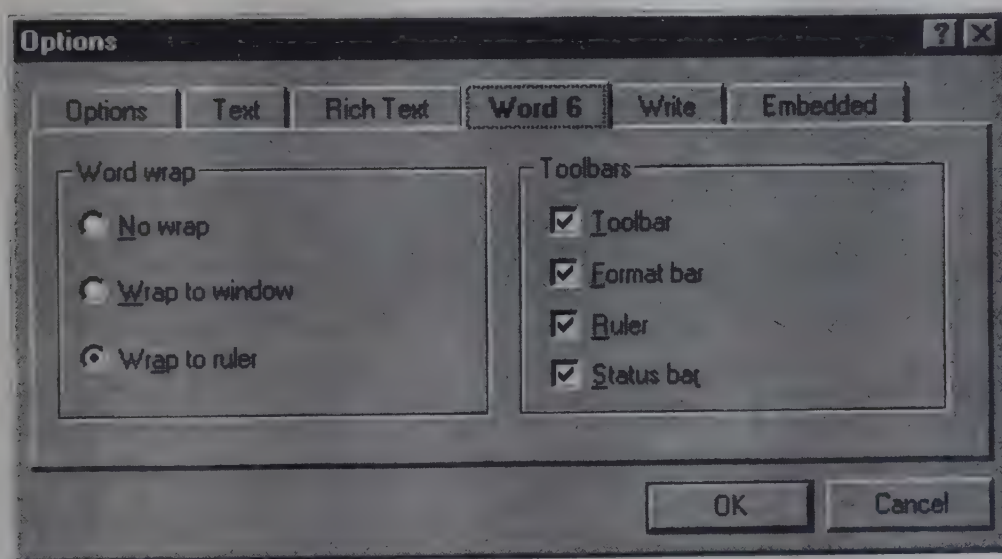


Figure 6.12 The Options dialog box.

The dialog box in Figure 6.12 has several kinds of controls. It has tabs that select different dialog functions, two command buttons, four checkboxes, and three radio buttons. We'll use this dialog box to learn the basics of dialog box usage.

Moving Around the Dialog Box

A dialog box can contain several different controls. At any given time you can enter data into only one of them. The one that is currently accepting input has the focus. To enter data into another control, you must give the focus to the new control. With the mouse you usually click the control, although this action sometimes changes its value, too. The **Tab** key moves the focus from control to control in a forward direction; **Shift+Tab** moves to the preceding control.

The dialog box indicates the current control by surrounding its label with a dotted line, with different shading, or, in the case of a text control, by moving the keyboard cursor to the control.

Some control labels include underlined letters to identify the control's shortcut key. Press the letter to move to the control or to select its value. For example, you can press the **T** key to select the **Toolbar** checkbox control in Figure 6.12.

Command Buttons

The dialog box in Figure 6.12 has two command buttons: **OK** and **Cancel**. These command buttons are typical; most dialog boxes have them. Pressing the **OK** button means that the values in the dialog box are correct and should take effect. When you choose the **OK** button, the dialog box closes and its data values are posted to the application that uses them. When you choose the **Cancel** button, the box closes and the application ignores any values that you changed.

You choose a command button by clicking it with the mouse or by pressing the **Enter** key when the command button has a dark frame. Observe that the **OK** button in Figure 6.12 has a darker frame than the **Cancel** button.

When the dialog box needs the **Enter** key for something other than choosing the command button with a dark frame, the frames of all the buttons have a light frame. Usually, the **Enter** key is associated with whichever command button has the dark border. Most of the time, that is the **OK** button. Observe that as you tab among the controls, the **OK** button maintains its dark border until you tab to a different button. This convention allows the **Enter** key usually to mean that you want to accept the values in the dialog box and to mean something else only when a command button other than the **OK** button is selected.

If you want to choose **Cancel** from the keyboard, use the **Tab** key to step through the entry fields until the **Cancel** button has the dark frame and then press **Enter**. Another way is to press **Esc**, which always chooses **Cancel**.

When a command button's label is followed by ellipses (...), choosing the command button opens another dialog box.

Checkboxes

A *checkbox* is a toggled option similar to the toggled commands on menus. A checkbox is either on or off (checked or not checked), and its setting influences how the application works. The controls in the Toolbars group in Figure 6.12 are checkboxes. To toggle a checkbox, you click the box or its label, press its shortcut key, or tab to the control and press the **Spacebar** key.

Radio Buttons

Radio buttons appear in groups in which only one of a list of options may be chosen. All these small circles have blank centers except the selected one, which has a dark circle in the center. Figure 6.12 uses radio buttons to set the text editing word-wrap options. The name *radio button* is used because the buttons in a group resemble the station-selector buttons on older automobile radios. Press a new button and the one that is currently pressed pops out.

Click a specific button to choose it. Tab to the button group and use the arrow keys to change the chosen button. When the button labels have underlined letters, press those keys to select the option button you want.

Tabs

Tab controls identify pages of a dialog box. The tabs are labeled, and you click one to turn to its page. Figure 6.12 has six tab controls to select the options page for each of the document formats that WordPad supports. When the tab name is selected, use the arrow keys to display the tab page you want. Then press **Tab** or use the arrow keys to change tab controls.

Text Boxes

A *text box* allows you to enter short strings of text data. Close the Options dialog box by choosing **Cancel**. Click in WordPad's work space and type some text. Open the Find dialog box by choosing the **Find** command on the Edit menu. Typing the text into the work space enabled the **Find** command, which is disabled when the work space is empty. Figure 6.13 is the Find dialog box.

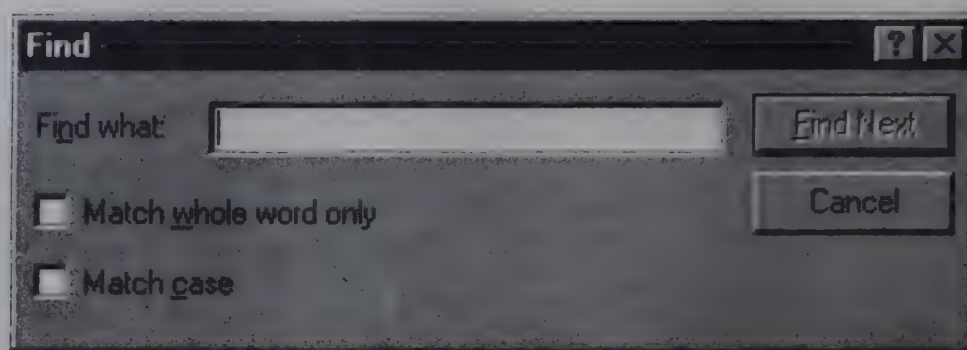


Figure 6.13 The Find dialog box.

The dialog box in Figure 6.13 includes a text box named *Find what*. When you open the dialog box, the text box control is selected and the keyboard cursor is active in the control. You can type text of any kind into the text box control. Notice that before you type any text, the **Find Next** command button is disabled. As soon as you type the first character, the **Find Next** command button is enabled. If you were to then choose **Find Next**, the program would search the document for a match on the text you entered, using the options in the checkbox controls to determine how to conduct the search. You can experiment with that feature now if you like. To continue, choose **Cancel** to close the Find dialog box.

Lists

Some dialog boxes display lists of items from which you can choose. The list displays within a small window. Choose the **Date and Time** command from WordPad's Insert menu to open the Date and Time dialog box shown in Figure 6.14.

The Date and Time dialog box presents a list of date and time formats from which you can choose. The list displays the current date and time so that what you see can be inserted into the text. If you select a format and choose **OK**, the program inserts the current date or time into the text in the chosen format.

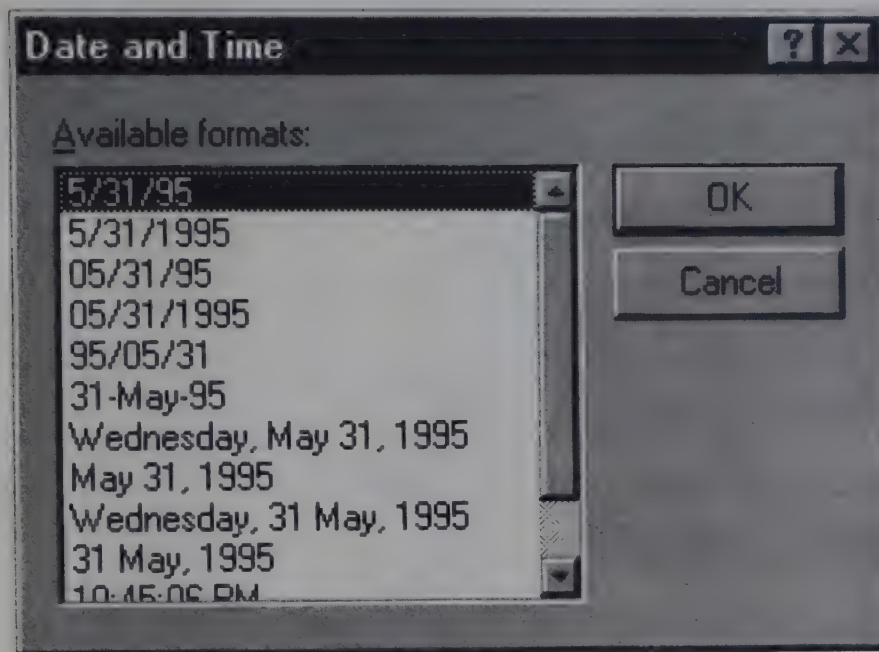


Figure 6.14 The Date and Time dialog box.

To select an item on a list, click the item or use the up arrow, down arrow, **Home**, **End**, **PgUp**, and **PgDn** keys to move the cursor bar through the list. Use the scroll bar to view the entire list. Observe carefully that using the scroll bar does not change the selected item; it changes only your view of the list. Choose the selected item by choosing **OK**. You can choose an item that is not currently selected by double-clicking it.

Close the Date and Time dialog box by choosing **Cancel**.

Combo Boxes

Some dialog boxes combine text boxes and lists into a *combo box*. You can type text into the text box or select text from an associated list box to go into the text box. Open WordPad's Font dialog box by choosing the **Font** command on the Format menu. Figure 6.15 is the Font dialog box.

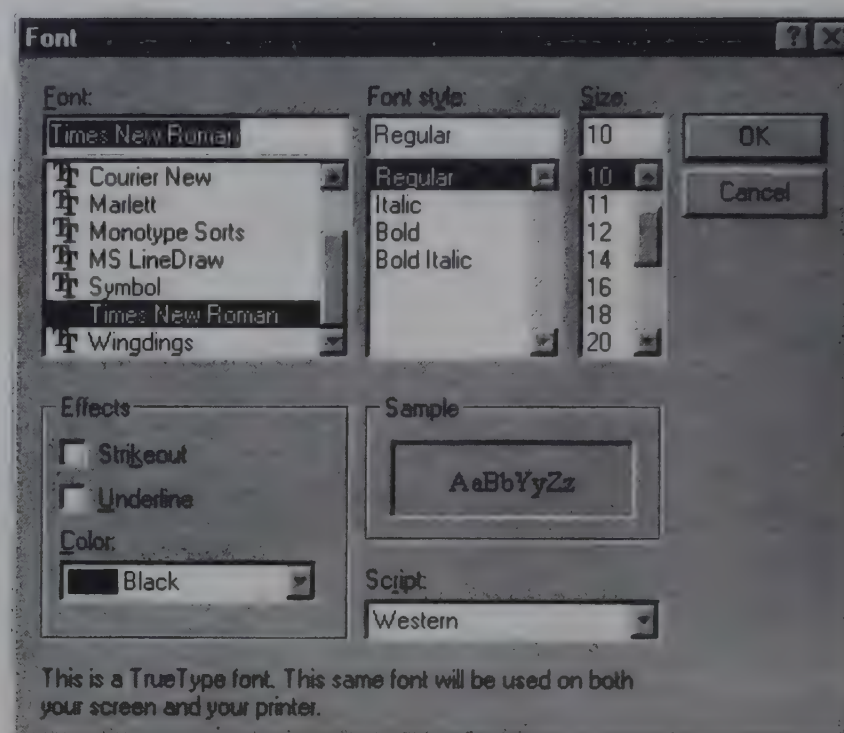


Figure 6.15 The Font dialog box.

The **Font**, **Font style**, and **Size** controls in Figure 6.15 are combo boxes. You can type into their text boxes, and you can select text from their list boxes. When you type, the list boxes page to the closest entry that matches what you type. This feature allows you to find an entry for which you know at least the first few letters. When you see the entry you want in the list, select it. Its text is copied into the text box. That text becomes the chosen option for that control when you choose the dialog box's **OK** command.

Drop-Down Lists

The **Color** and **Script** controls in Figure 6.15 are *drop-down lists*. Initially the text box portion of each control displays the current value, and the list box is out of sight. You cannot type into either of these text boxes, although not all drop-down list controls are read-only.

To open the drop-down list, click its down arrow with the mouse, or tab to the control and press **Alt+Down Arrow**. Figure 6.16 shows the **Color** drop-down list after it has been opened.

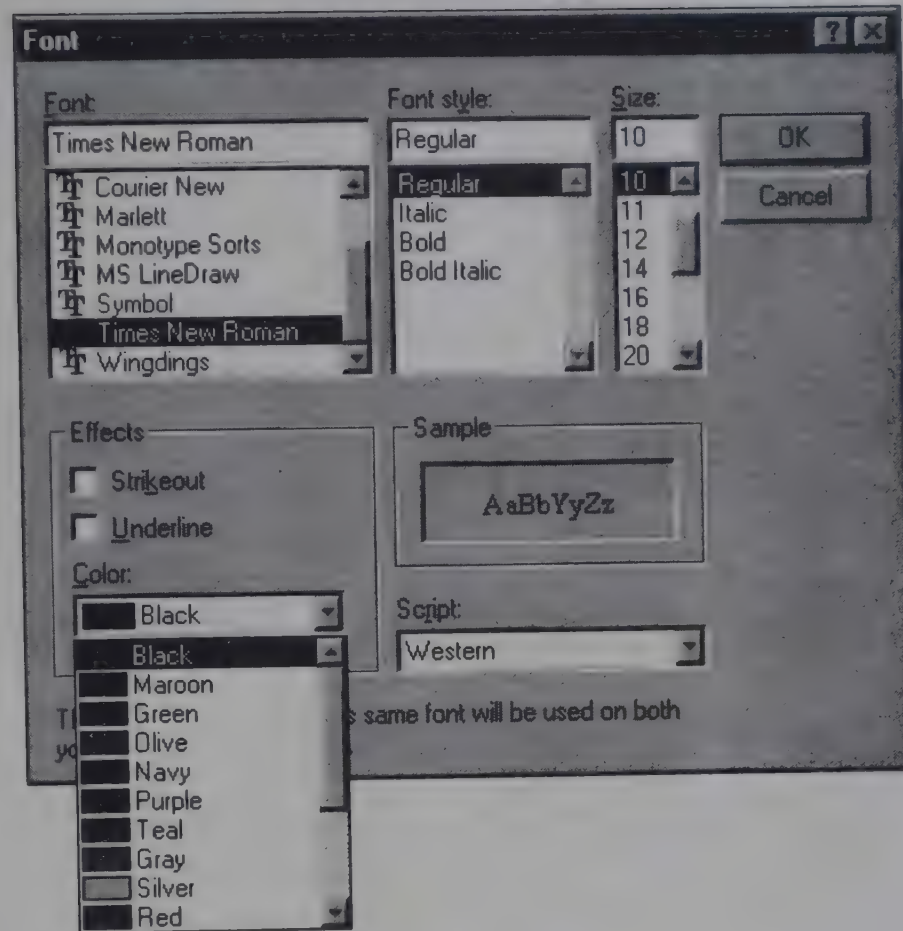


Figure 6.16 A drop-down list.

After a drop-down list has dropped down, it works just like a list except that it closes after you have made your selection. While the list is dropped down, the **OK** and **Cancel** commands are associated with the list rather than with the dialog box.

Spin Buttons

When a range of numbers is required and you must select a specific value, a dialog box can use a *spin button* control. Close the Font dialog box and open the Print dialog box by choosing the **Print** command on the File menu. Figure 6.17 is the Print dialog box.

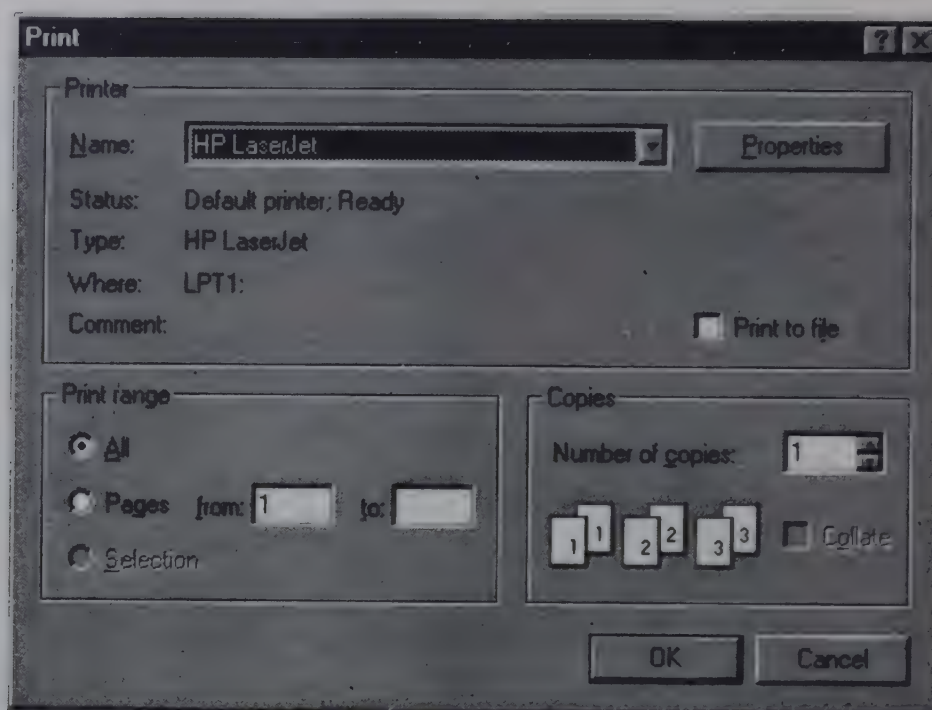


Figure 6.17 The Print dialog box.

The **Number of copies** control in the Print dialog box in Figure 6.17 is a spin button. You can type a number into its text box or increment and decrement the value by clicking the up and down arrow buttons to the right of the text box. If you hold down the mouse button on one of the arrows, the number changes rapidly.

COMMON DIALOGS

Windows 95 has several common dialog boxes—ones that most applications use for common functions. Two of them are the Font and Print dialogs just discussed. Two more are the Open and Save As dialog boxes. The Open dialog box opens when you choose **Open** on the File menu. The Save As dialog box opens when you choose **Save As** on the File menu or when you choose the **Save** command for a new document that has never been saved. Both dialog boxes look alike, but their behaviors are slightly different.

The Save As Dialog Box

We haven't saved any documents yet, so we begin with the Save As dialog box. Type some text into WordPad and choose the **Save As** command on the File menu. You'll see the Save As dialog box shown in Figure 6.18.

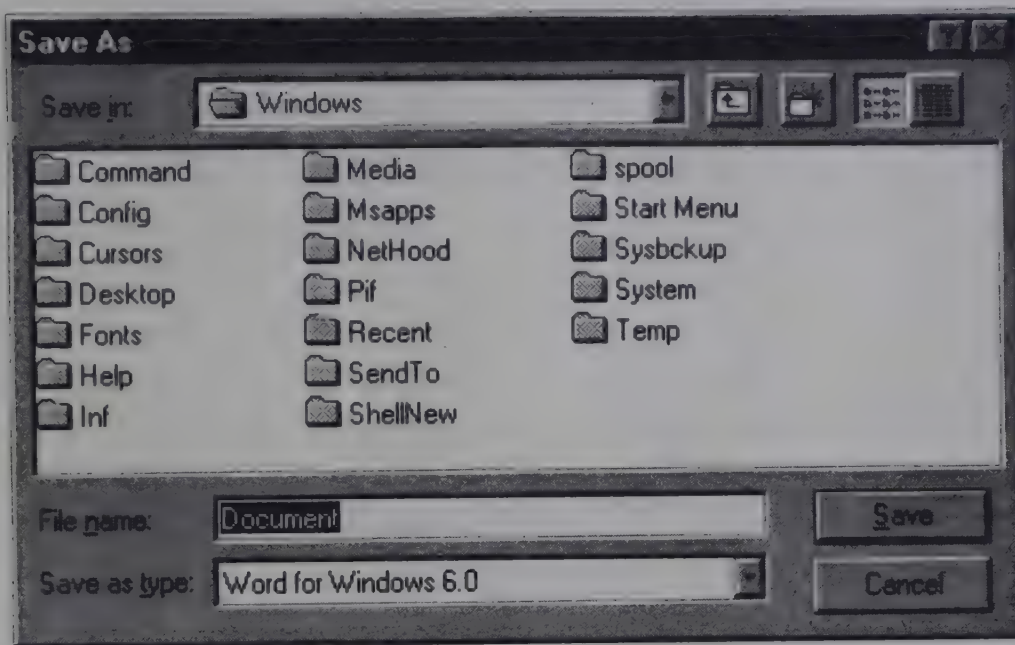


Figure 6.18 The Save As dialog box.

The Save As dialog box allows you to name your document and give it a home—a place in the file system to reside. The Save As dialog box allows you to name the document and then browse your computer—and the computers in the network if you are logged onto a network—looking for a place to save the document.

The File name control is where you type the name. It starts with a default name of Document, but you should use something more appropriate. Windows 95 file names can be 256 characters long, so you can be as descriptive as you want. The document might be named something like “Invitation to Sharon to the Corporate Strategy Planning Retreat,” for example.

If you are versed in the Windows 95 file system’s hierarchical directory structure and the conventions for specifying paths, you can type the document’s disk drive, subdirectory specification, and file name into the **File name** text box control and choose **OK**. Most people do not do this. Even if you routinely used paths and file names under MS-DOS and Windows 3.1, you will probably avoid that usage under Windows 95. The Windows 95 long file names are not as easy to get right as were the terse, 8.3 format file names of their ancestors. They are easier to read and understand but not as easy to remember, particularly when a file name can be as long as 256 characters.

Many people never use the Save As dialog box. They work in the document-centric mode that Windows 95 supports. They launch applications from

existing documents that they create and name from the desktop rather than create new documents in the empty work space of independently launched applications. They use the **Save** command to save such documents, because the documents already have names and locations.

Before you choose **OK**, you must select a folder to put the document into.

The **Save in** control identifies the current folder. In Figure 6.18, the current folder is Windows, which is the default folder that WordPad logs into when it starts running. You can change to the folder that Windows is in by clicking the folder icon to the immediate right of the **Save in** control.

The **Save in** control is a drop-down list box. The list shows the contents of the desktop. Drop down the list and scroll it to the top. Select the **Desktop** item. Desktop is now the current location in the **Save in** control.

The list below the **Save in** control shows the Desktop object's contents. You can change an object on the desktop by double-clicking the object or by tabbing to the list, using the arrow keys to select a folder, and pressing **Enter**.

You can create a new folder by clicking the folder icon two folders to the right of the **Save in** control. We'll do that now. The new folder is added to the list and named *New Folder*. Rename the new folder *Memos*. Choose the new folder to receive the document by double-clicking the **Memos** object in the list. Now choose **OK** in the Save As dialog box, and the document that you typed into WordPad is stored in the Memos folder on the desktop with the long name that you assigned.

The Open Dialog Box

Choose the **New** command on the WordPad File menu to clear the document you just saved. Now choose the **Open** command on the File menu to open the Open dialog box. Figure 6.19 is the Open dialog box.

The Open dialog box allows you to specify a document to load into an application—in this case, into WordPad. The Open dialog box allows you to browse your computer looking for the document you want to process in the application.

Many people never use the Open dialog box; they work in the document-centric mode that Windows 95 supports and launch applications from documents rather than load documents into independently launched applications.

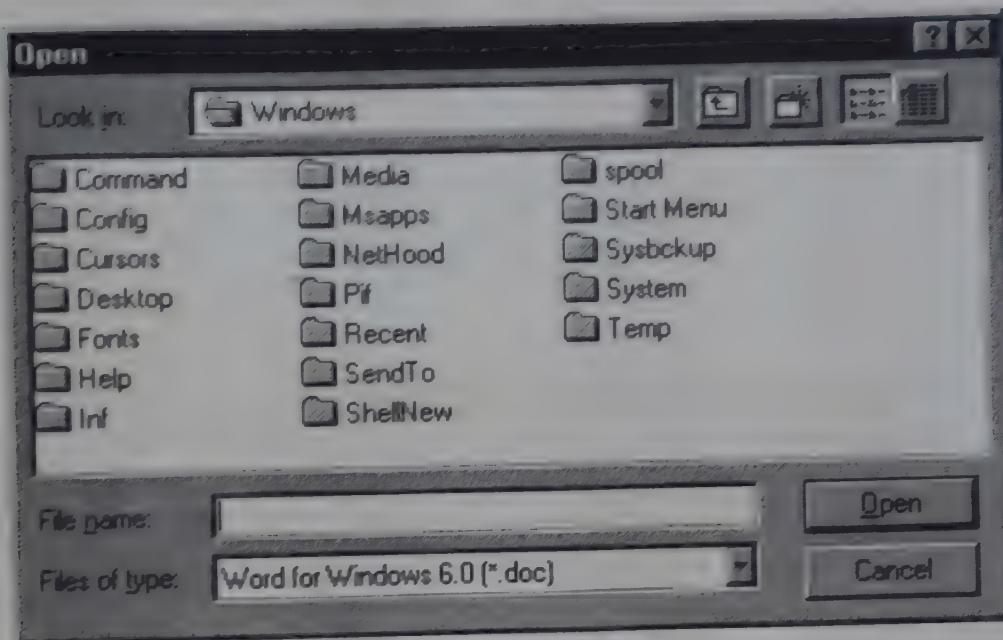


Figure 6.19 The Open dialog box.

The Open dialog box works just like the Save As dialog box except that the Open dialog box searches for an existing document rather than a place to put a new document. You are already logged into the Memos folder that you created, so the list displays the one document in that folder—the memo with the long name. Select that document. Its name displays in the **File name** control. Choose **OK**, and WordPad loads the memo.

Print Dialog Boxes

Windows 95 has two standard dialog boxes to support printing. We'll discuss them in Chapter 10.

MULTIPLE-DOCUMENT INTERFACE APPLICATIONS

Some Windows 95 applications use the *multiple-document interface* (MDI). An MDI application processes more than one document at the same time. The application window hosts multiple document windows, and you switch between documents by changing the focus between document windows.

None of the Windows 95 accessory and utility applications is an MDI application, so I built a small one to use as an example. You can't play along with this demonstration, because the application I built is not installed on your PC. That's OK, because it doesn't do anything except show you how the MDI works.

Microsoft Office applications (Word, Excel, Access, and PowerPoint) are MDI applications. If you have one of these, you can use it to observe the behavior of MDI applications.

Figure 6.20 shows the MDI demo application when it starts up. It looks like any other application with these exceptions: The document is a smaller window within the borders of the application window, and there is a Window menu on the menu bar.

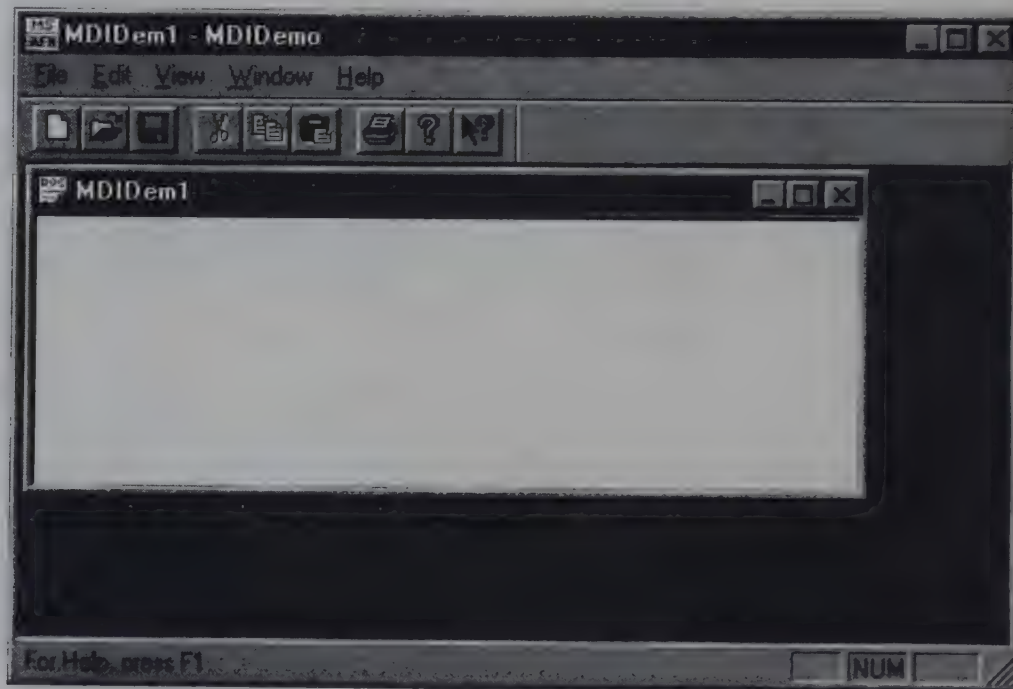


Figure 6.20 The MDI demo application.

You can move the document window around just as you would any other window except that a document window does not display outside the borders of the application window.

Opening Several Documents

Each time you choose the **New** command on the File menu, another document window opens. In a real application, each time you use the **Open** command to open an existing document, another document window opens. Figure 6.21 shows the MDI demo application with several open document windows.

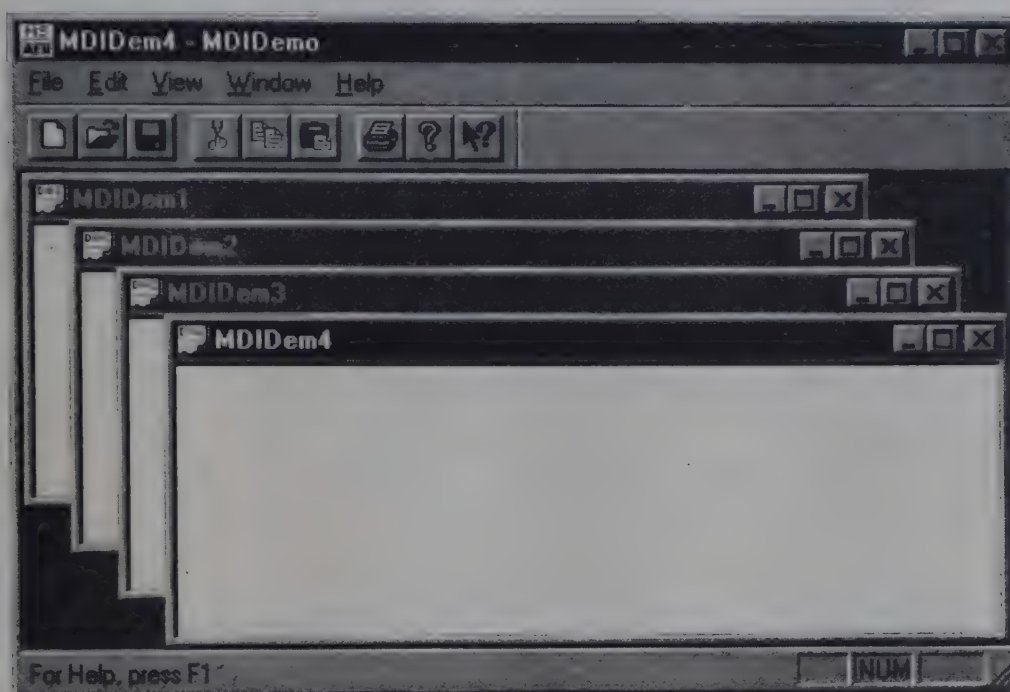


Figure 6.21 Multiple document windows.

Switching Between Document Windows

You can change the document focus by clicking any part of the document window that has the document you want to work with. You can step through the document windows in sequence by pressing **Ctrl+F6**.

All menu commands affect the document that has the focus. For example, the **Save** command saves the document in focus.

Maximizing Document Windows

When you maximize a document window, it expands to occupy the application's entire work space. Figure 6.22 shows the MDI demo application with a maximized document window.

The minimize, restore, and close buttons at the right end of the application's menu bar belong to the document window. The ones right above them belong to the application.

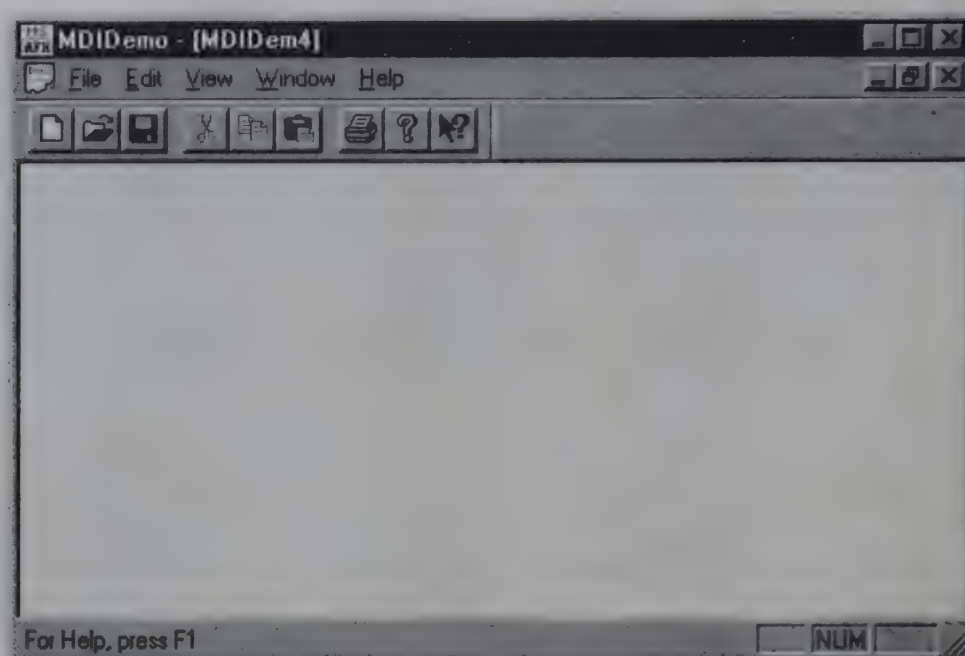


Figure 6.22 A maximized document window.

Minimizing Document Windows

When you minimize document windows, they shrink into short title bars at the bottom of the application's work space. Figure 6.23 shows the MDI demo application with all its document windows minimized.

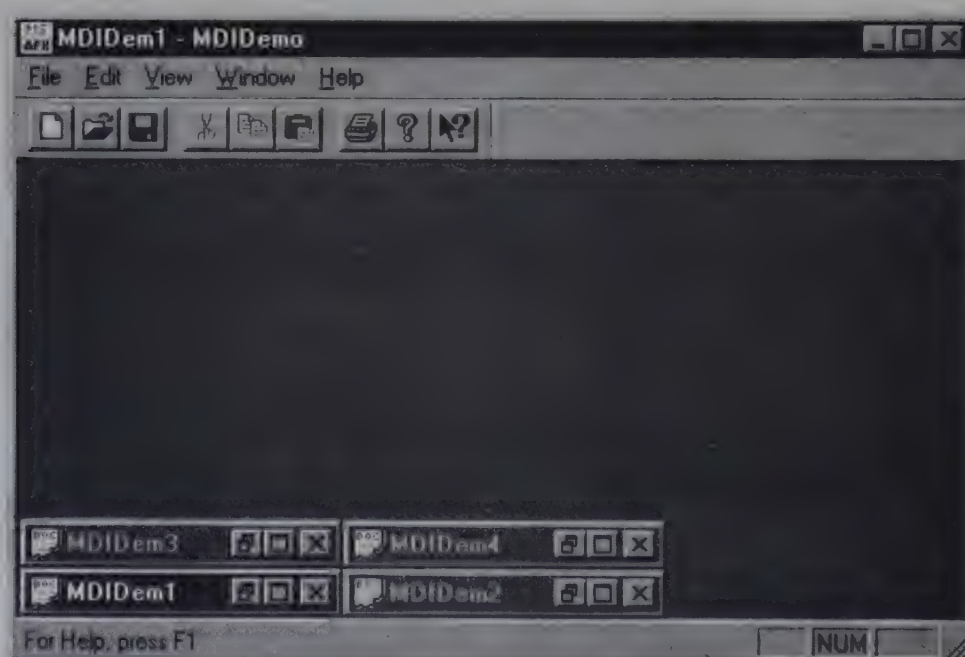


Figure 6.23 Minimized document windows.

The Window Menu

The Window menu allows you to organize the document windows and change the focus to a specific window. Figure 6.24 shows the Window menu.

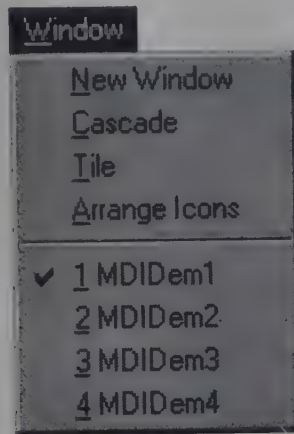


Figure 6.24 The Window menu.

New Window Command

The **New Window** command creates a new document window with a new view of the document that has the focus. When you first do this, there are two windows that display the same document. Any change that you make to one window is shown in the other.

Cascade Command

The **Cascade** command arranges the document windows in a cascaded display. Figure 6.21 is cascaded.

Tile Command

The **Tile** command arranges the document windows in a tiled display.

Arrange Icons Command

The **Arrange Icons** command arranges minimized documents in an orderly stack at the bottom of the application's work space.

Window List

The window list has an entry for each document window. The entry with the check mark is the document that has the focus. You can choose another entry

from the list to change the focus to a different document. If there are more than nine documents, the bottom selection says "More Windows," and choosing it opens a list box of all the documents.

THE CLIPBOARD

The clipboard is a temporary data storage bin that you use to exchange text and graphics between applications, between documents in an application, and even between places in the same document. To move data with the clipboard, you cut or copy data from a document into the clipboard and paste data from the clipboard into the same or another document.

The clipboard holds either text or graphics images but not both at the same time. It retains its contents until you delete the data, copy other data to the clipboard, or exit from Windows 95.

Selecting Text

To send text to the clipboard, you must first select the text. To select a block of text with the mouse, move the cursor to the first character of the block, hold down the left mouse button, and drag the cursor to the last character of the block. As you move the mouse, the text is highlighted to indicate the range of the selected block. Release the mouse button when the text block that you want in the clipboard is selected.

To select text with the keyboard, move the keyboard cursor to the first character of the block. Hold the **Shift** key down and move the cursor with the arrow keys. As you move the cursor, the text is highlighted to indicate the range of the marked block. To clear the marking of a block, release the **Shift** key and move the cursor.

Figure 6.25 shows an application with a selected block of text.

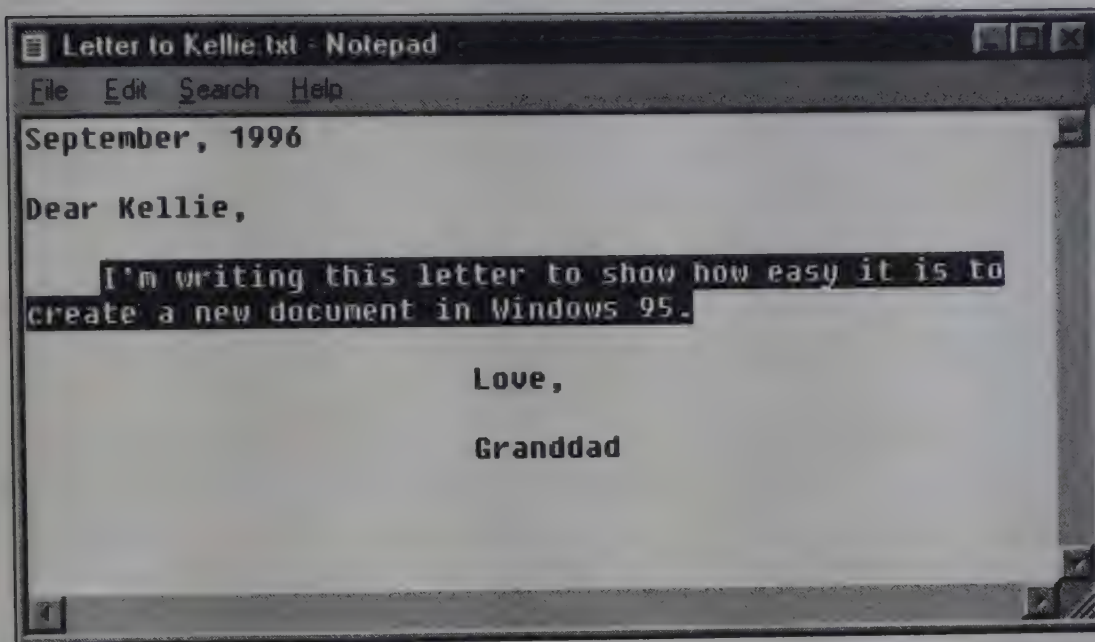


Figure 6.25 Selected text.

Selecting Graphics

Techniques for selecting graphics vary from application to application.

Copying and Cutting to the Clipboard

After you select the data, you can cut or copy it to the clipboard. Cutting deletes the data block from the sending application's document. Copying leaves the data in the sending application's document.

Copying

To copy the selected data to the clipboard, choose the **Copy** command from the application's Edit menu. **Ctrl+C** is the **Copy** command's accelerator key.

Cutting

The **Cut** command on the Edit menu has the same effect as the **Copy** command except that **Cut** deletes the selected data from the sending application's document when it transfers the data to the clipboard. **Ctrl+X** is the **Cut** command's accelerator key.

Pasting Data from the Clipboard

Choose the **Paste** command from the Edit menu to paste clipboard data into an application. **Ctrl+V** is the **Paste** command's accelerator key. The application's insertion point—the keyboard cursor in a text application—must be positioned where you want the clipboard data to be pasted.

DRAGGING AND DROPPING DATA

Some Windows 95 applications can exchange data with drag-and-drop operations, a more convenient user interface than using the clipboard. You can select data in a document in one application and then drag and drop the selected data to another document in another or the same application.

Not all applications support drag-and-drop data exchange. WordPad does, but Notepad does not.

You can experiment with drag-and-drop data exchange by launching two copies of WordPad from the Programs/Accessories menu. (That's right—you can have more than one copy of the same program running under Windows 95.) Type some text into one of the copies and select that text. Figure 6.26 shows both copies with the text typed into one and selected.

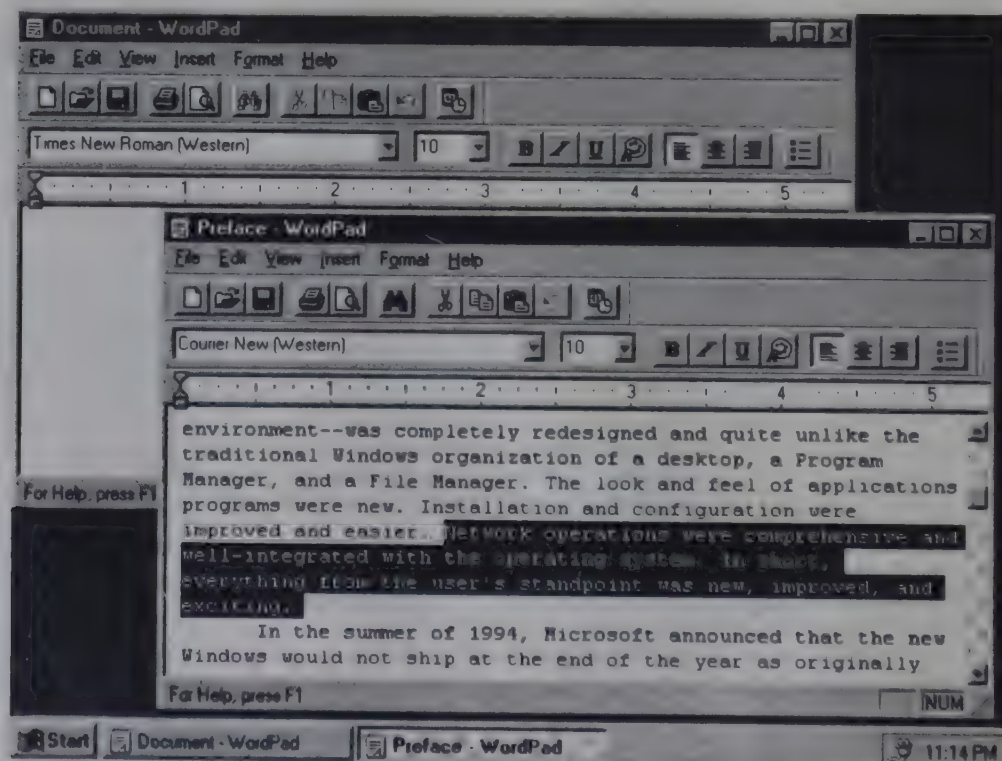


Figure 6.26 Drag and drop between two applications.

Drag and drop the selected text to the other copy of WordPad. The selected text from the first application is moved to the other application. If you want to copy the information, press and hold **Ctrl** while you drag and drop the text.



CHAPTER 7

Accessory Applets

This chapter is about the accessory applications that are included with Windows 95—what Microsoft calls *applets*. Applets are small applications—productivity tools, utilities, and a small word processor. You launch them from the documents that they support or by opening the Start menu, choosing Programs, and clicking Accessories. You will learn about:

- Calculator
- Clipboard Viewer
- Notepad
- Paint
- Phone Dialer
- WordPad

Not all these items install automatically when you install Windows 95. Clipboard Viewer, for example, must be installed as one of the Accessories options. See the section “Windows Setup,” in Chapter 9 for more information on adding Windows 95 options.

CALCULATOR

Calculator is an on-screen calculator. There are two calculators built into the application: the Standard Calculator and the Scientific Calculator.

The Standard Calculator

Figure 7.1 is the Standard Calculator. It resembles the typical pocket calculator, with add, subtract, multiply, and divide functions, a square root function, a percent function, a reciprocal function, and memory.

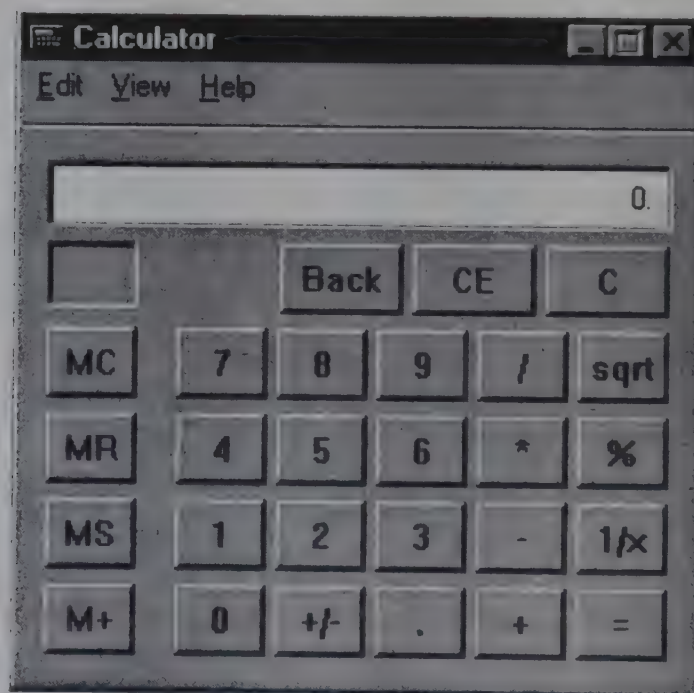


Figure 7.1 The Calculator.

Entering Numbers

You enter numbers into the Calculator by clicking its digit buttons or by typing the numbers on your keyboard.

Use the . (period) function button or key to begin entering digits to the right of the decimal place.

The **Back** command button and the keyboard's **Backspace** key will remove the last digit you entered.

The **CE** (Clear Entry) command button and the keyboard's **Del** key will clear the current entry from the Calculator's display without modifying the current calculation.

The **C** (Clear) command button and the keyboard's **Esc** key will zero out the Calculator completely.

Calculating

The +, -, *, and / arithmetic operators and the = operator work just like those in a standard calculator. Both the **Enter** key and the = key on the keyboard will do what the = command button does.

The **sqrt** command button and the @ key compute the square root of the number in the display.

The **1/x** command button and the **r** key compute the reciprocal of the number in the display.

The +/- command button and the **F9** key change the sign of the number in the display.

Memory

The Calculator has a one-value memory. When the memory is other than zero, the box immediately above the / and **sqrt** function buttons displays an **M**.

The **MC** command button and the **Ctrl+C** key reset memory to zero.

The **MR** command button and the **Ctrl+R** key display the value in memory.

The **MS** command button and the **Ctrl+M** key store the value currently displayed by the Calculator into memory.

The **M+** command button and the **Ctrl+P** key add the value currently displayed by the Calculator to the value that is in memory.

The Scientific Calculator

Change to the Scientific Calculator by choosing **Scientific** on the View menu. Figure 7.2 is the Scientific Calculator.

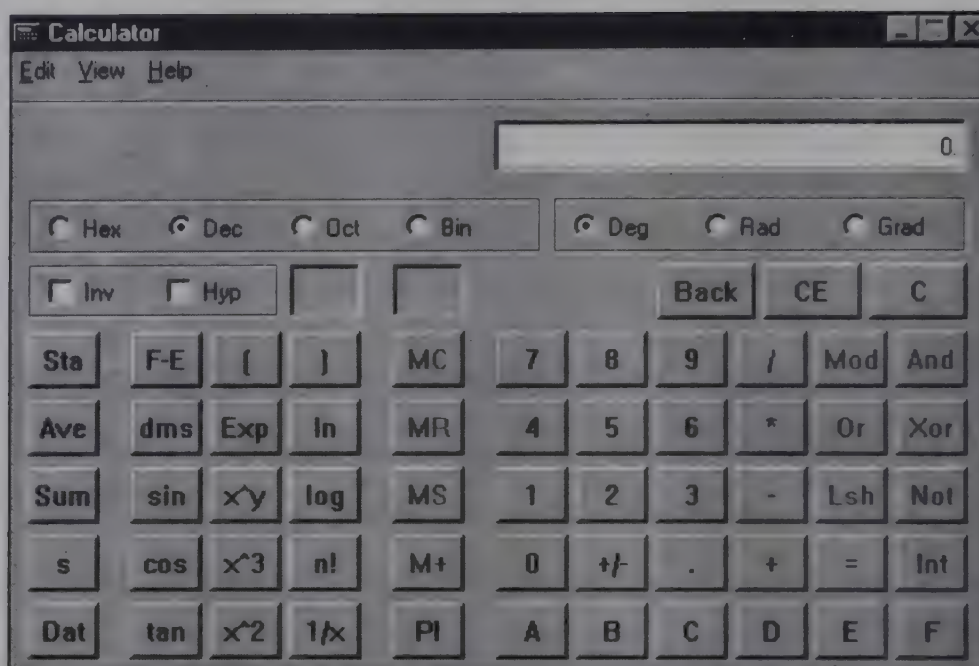


Figure 7.2 The Scientific Calculator.

Number Systems

You can set the Calculator to work in the hexadecimal, decimal, octal, and binary number systems by selecting the appropriate **Hex**, **Dec**, **Oct**, and **Bin** radio button. The keyboard keys to select these systems are **F5**, **F6**, **F7**, and **F8**.

When you have selected **Hex**, **Oct**, or **Bin**, the box to the right of the number system option buttons changes to show three option buttons labeled **Dword**, **Word**, and **Byte**. **Dword** causes the display to show the full value of the word. **Word** displays the value represented by only the lower 16 bits. **Byte** displays the value represented by the lower eight bits. **Word** and **Byte** affect the display only; they do not change the value.

Statistical Functions

The Scientific Calculator supports statistical functions. Choose the **Sta** command button or press the **Ctrl+S** key. You will see the Statistics box shown in Figure 7.3. The Statistics box is a modeless dialog box, which means that you can change the focus back to the Calculator without closing the Statistics box.

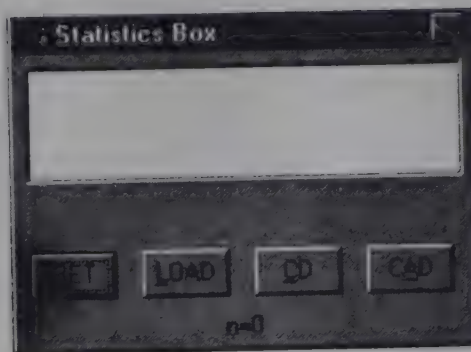


Figure 7.3 Statistics box.

You might need to move the Statistics box around so that you can see more of the Calculator. Choose the **RET** button in the Statistics box to return to the Calculator. Enter a value and choose the **Dat** command button or press the **Ins** key. The value appears in the Statistics box. Enter more values the same way.

If you want to take the mean of the numbers, choose **Ave** or press the **Ctrl+A** key. If the **Inv** checkbox in the Calculator is selected, this command computes the mean of the squares.

To take the sum of the numbers, choose **Sum** or press **Ctrl+T**. If the **Inv** checkbox in the Calculator is selected, this command computes the sum of the squares.

To take the standard deviation of the numbers, choose the **s** command button or press **Ctrl+D**. If the **Inv** checkbox in the Calculator is selected, this command computes the standard deviation with the population parameter set to the number of entries in the list of numbers. If the **Inv** checkbox in the Calculator is not selected, this command computes the standard deviation with the population parameter set to the number of entries in the list of numbers minus 1. The number of entries is shown in the Statistics box as the value **n** at the bottom of the box.

When you compute the value with one of the commands just described, the computed value appears in the Calculator's display.

The Statistics box has four command buttons: **RET**, **LOAD**, **CD**, and **CAD**. The **RET** button returns you to the Calculator. The **LOAD** button loads the Statistics box's currently highlighted value into the Calculator's display. You can do the same thing by double-clicking the entry. The **CD** button deletes the currently highlighted value from the Statistics box. The **CAD** button deletes all values from the Statistics box.

Logical Operations

The calculator supports the Boolean operators *And*, *Or*, *Not*, and *Xor* using command buttons on the righthand side. The corresponding keyboard keys for these operators are **&**, **|**, **~**, and **^**.

The **Lsh** command button and the **<** key perform a left shift on the value in the display. If the **Inv** checkbox is selected, **Lsh** performs a right shift.

Other Operators

The **Mod** command button and the **%** key calculate the modulus of two numbers, which is the remainder derived when the second number is divided into the first.

The **Int** command button and the **;** key deliver the integer portion of a number. If the **Inv** checkbox is selected, **Int** delivers the fractional portion of the number.

Calculating Expressions

You can use the **(** and **)** command buttons to establish precedence as you enter values and operators into a calculation. The box just above the **And** key displays the current depth of parentheses; for example, **(=3** means there are currently three unterminated left parens.

Trigonometric Input

When you are using the decimal number system, the box just below the display has the **Deg**, **Rad**, and **Grad** option buttons so that you can set the trigonometric input to degrees, radians, or gradients. The keyboard keys for these three functions are **F2**, **F3**, and **F4**.

Notation

When you are using the decimal number system, the **F-E** command button and the **v** key switch the display between scientific and normal notation.

Math Functions

Table 7.1 lists the Calculator's math functions and describes their function when the **Inv** and **Hyp** checkboxes are both off, both selected, or either one selected.

Table 7.1 Math functions.

COMMAND	BUTTON	KEYSTROKE	INV	HYP	DESCRIPTION
cos		O			Cosine
			on		Arc cosine
				on	Hyperbolic cosine
			on	on	Arc hyperbolic cosine
dms		M			Degrees/minutes/seconds
			on		Degrees
Exp		X			Permits scientific notation input
ln		N			Natural (base e) logarithm
			on		e ^ displayed number
log		L			Common (base 10) logarithm
			on		10 ^ displayed number
n!		!			Factorial
PI		P			3.14159265359
			on		6.28318530718
sin		S			Sine
			on		Arc sine
				on	Hyperbolic sine
			on	on	Arc hyperbolic sine
an		T			Tangent
			on		Arc tangent
				on	Hyperbolic tangent
			on	on	Arc hyperbolic tangent
x^y		Y			x ^ y
			on		yth root of x
x^2		@			Square
				on	Square root
x^3		#			
				on	3 root

The Clipboard

The Calculator's Edit menu has **Copy** and **Paste** commands. You can copy the value currently displayed by the Calculator to the clipboard to use in another application. You can paste a value from the clipboard into the Calculator.

If the clipboard contains certain text values, they will execute functions on the Calculator. Table 7.2 shows the corresponding values.

Table 7.2 *Clipboard to Calculator function values.*

IN CLIPBOARD	CALCULATOR FUNCTION OR OPERATION
c	MC
e	Switches to scientific notation
e+	Same as e, indicates positive exponent
e-	Same as e, indicates negative exponent
m	MS
p	M+
r	MR
: letter	Ctrl+letter
: number	Function key (:3 = F3)
\	Dat

CLIPBOARD VIEWER

Recall from Chapter 6 that you cut and copy data from documents to the clipboard and paste data from the clipboard into documents. Clipboard Viewer lets you view the data in the clipboard and save the data to clipboard data files. (Clipboard Viewer is not installed automatically when you install Windows 95. You must add it to the Accessories options using Add/Remove Programs in the Control Panel.) Figure 7.4 shows the Clipboard Viewer application.

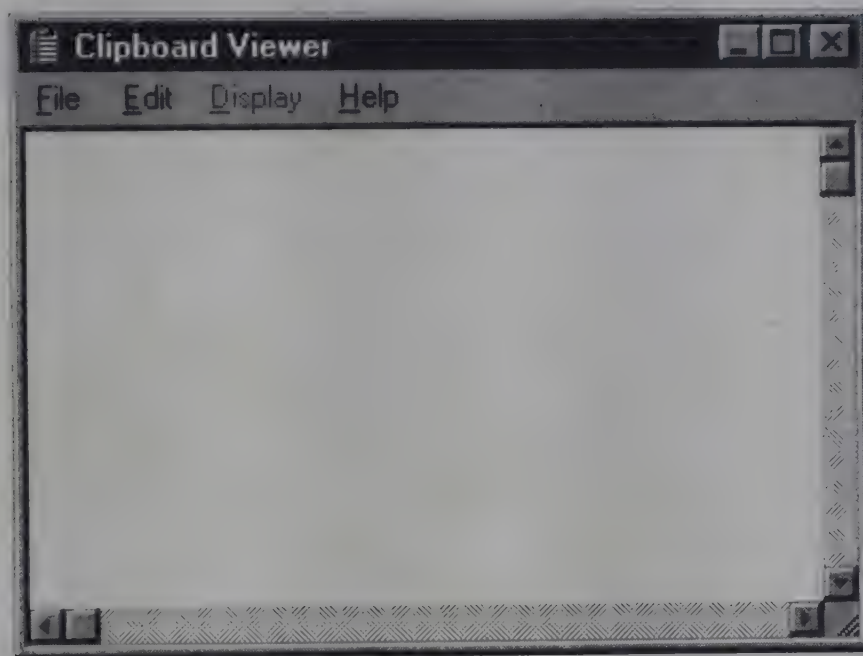


Figure 7.4 Clipboard Viewer.

The File menu has **Open** and **Save** commands that let you save the clipboard's contents into a file and load data into the clipboard from files saved earlier. The Edit menu has a **Delete** command that lets you clear the clipboard's contents. The Display menu offers several options for displaying the data.

Most users can ignore the clipboard except to use it for cut, copy, and paste operations in applications. They have little reason to use the Clipboard Viewer accessory, with one exception: If Windows 95 or an application is reporting memory exhaustion problems and the clipboard holds a large block of text or a large graphic, you can free some memory by using the Edit menu's **Delete** command to free the memory that the clipboard is using.

NOTEPAD

Notepad is a text editor suitable for memos and short letters. You used Notepad in some of the exercises in previous chapters. Figure 7.5 shows the Notepad application window.

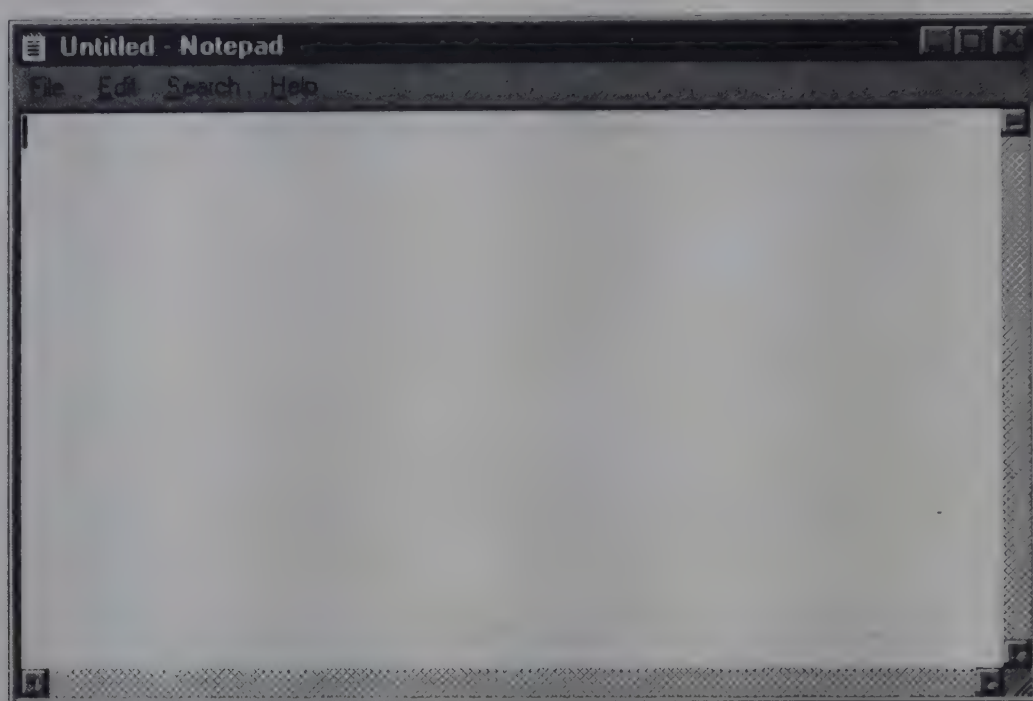


Figure 7.5 Notepad.

Notepad Files

Notepad can support text files as large as about 50,000 characters. The File menu has the usual **New**, **Open**, **Save**, and **Save As** commands. You can launch Notepad by selecting a text file with the extension .TXT.

Entering Text

You enter text by typing. The **Word Wrap** command toggle on the Edit menu tells Notepad to wrap words at the right window border, keeping all your text in view. You use this option for letters, memos, and documents. The paragraphs reform themselves as you change the size of the window. When **Word Wrap** is on, the horizontal scroll bar goes away. Word Wrap is off by default when you first run Notepad.

The **Enter** key defines the end of a paragraph.

Moving Around in the Text

You can move the cursor to a point in the text file by moving the mouse cursor there and clicking. You can also use the keyboard to move the cursor. Table 7.3 shows the keystrokes that move the cursor.

Table 7.3 *Cursor movement keys.*

KEYSTROKE	MOVEMENT
Up and down arrow keys	Up and down one line
Right and left arrow keys	Right and left one character
Ctrl+right/left arrow	Right and left one word
Home/End	Beginning and end of the line
PgUp/PgDn	Previous and next screen
Ctrl+Home/End	Beginning and end of the file

Selecting Text

Select blocks of text for cutting and copying to the clipboard or for deleting. Click the first character of the block and hold the left button down while you drag the cursor to the end of the block. The highlighted text displays in reverse video.

To select a block of text with the keyboard, use the keys in Table 7.3 while you hold down the **Shift** key.

The **Select All** command on the Edit menu selects all the text in the file. To deselect a marked block, click the cursor once or press an arrow key.

Deleting Text

The **Del** or **Backspace** key deletes a selected text block. Pressing a character key will delete the block and insert the character. You can use the **Undo** command on the Edit menu to undo the most recent deletion.

When no block is selected, the **Del** key deletes text one character at a time to the right of the cursor. The **Backspace** key deletes text one character at a time to the left of the cursor.

Cut, Copy, and Paste

The **Cut** and **Copy** commands on the Edit menu cut and copy the selected block of text to the clipboard. The **Paste** command pastes the current text contents of the clipboard into the Notepad document beginning at the current cursor location.

Searching a Text File

You can search the document for a string value. The **Find** command on the Search menu opens the Find dialog box shown in Figure 7.6.

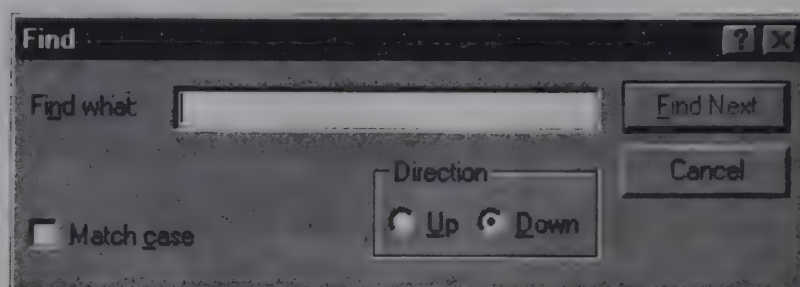


Figure 7.6 The Find dialog box.

Enter the text you wish to find in the **Find what** field. If you want to have the search match your entry exactly on upper- and lowercase letters, select the **Match case** checkbox. The **Up** and **Down** radio buttons specify the direction you want to search starting at the current cursor location. A search proceeds forward to the end of the file or backward to the beginning of the file.

If Notepad does not find the text, it displays an error message. If it finds the text, it stops searching and marks the found text.

The **Find Next** command on the Search menu searches from the point of the last text that was found, continuing in the direction you originally selected.

Date-Stamping a File

The **Time/Date** command on the Edit menu inserts the current time and date into the text at the current cursor position. If you type .LOG into a file beginning in the left margin of the first line, Notepad will append the current time and date onto the file and position the cursor on the next line after the date every time you open the file. This feature allows you to define a diary or journal file that always date-stamps your entries.

Printing

The File menu has the usual **Print** command. You can use the **Page Setup** command to design the format of the printout of the text file.

Change the four margin values by entering the new values into the **Left**, **Right**, **Top**, and **Bottom Margin** fields. You can enter text and certain symbols into the **Header** and **Footer** fields. Table 7.4 shows the symbols that insert values into the header and footer.

Table 7.4 *Notepad header and footer symbols.*

SYMBOL	INSERTS
&t	Time
&d	Date
&p	Page number
&f	Name of the file
&l	Text that follows the symbol is justified left
&r	Text that follows the symbol is justified right
&c	Text that follows the symbol is centered

PAINT

Paint is a graphical composition program. You use it to create color pictures in Windows 95's .BMP bitmapped graphics format. You can incorporate these pictures into documents and presentations by importing the .BMP files into a word processor or slide show program.

Paint is launched from the Accessories menu or by double-clicking a graphical file on the desktop or in a folder. You can create a graphical file using the **New** command of the desktop's right-click menu. Choose **Bitmap Image** from the cascaded **New** menu.

Figure 7.7 is the Paint application window.

You create and modify pictures by using the tools in the *tool box* to create effects that use the colors in the *color box*. The tool box is initially on the left side of the application window, and the color box is at the bottom. Both are floatable and dockable, which means that you can drag and drop them anywhere on the desktop. This feature releases more of the application window for the work space, permitting you to view more of the picture that you are working on.

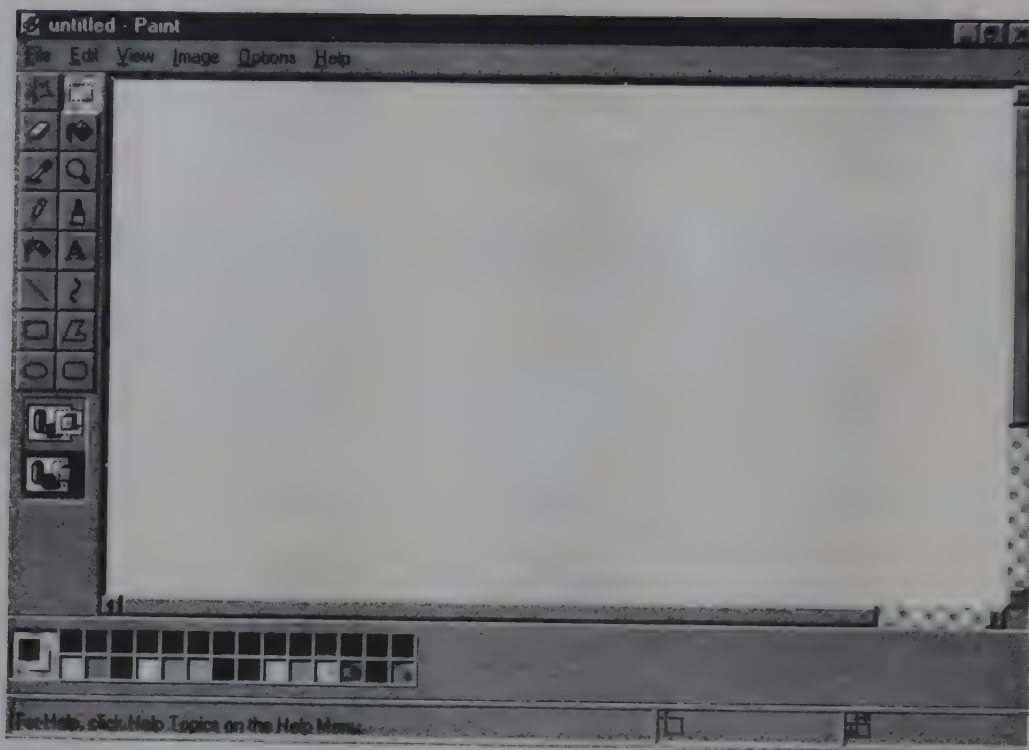


Figure 7.7 Paint application.

Color Box

The color box allows you to select the current background and foreground colors from a palette. Figure 7.8 shows the color box.



Figure 7.8 Paint's color box.

Select the current foreground color by clicking one of the colors in the palette. Select the current background color by double-clicking one of the colors. The overlapping colors at the left end of the color box display the current foreground and background colors.

Tool Box

The tool box contains buttons that select drawing tools. Figure 7.9 shows the tool box and the meaning of each tool.



Figure 7.9 Paint's tool box.

These tools allow you to select a region on the screen to move, cut, copy, or modify using **Image** commands. You define a free-form selection by dragging the mouse cursor around as you draw the selection. You define a rectangular selection with the **Select** tool by dragging the mouse cursor from one corner position of the rectangle to the opposite corner.

When either selection tool is active, the options box displays two selections, as Figure 7.10 shows.

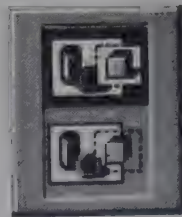


Figure 7.10 The selection options box.

When the upper option in Figure 7.10 is selected, an opaque selection is drawn, which means that the entire selection is moved regardless of any of its colors. When the lower option is selected, the background color of the selection is treated as a transparent color during redraw of the selection.

Eraser/Color Eraser

The eraser tool erases parts of the picture with the background color. You erase by dragging the mouse cursor across the picture. The options box provides four eraser sizes to choose from.

Fill With Color

The **Fill** tool fills the portion of the picture that you point to with the foreground color. The portion filled is defined by the color boundaries of whatever you point to.

Pick Color

The **Pick Color** tool sets the foreground and background colors to the color in the picture that you click on. This feature lets you use a color from an imported picture when the color is not on the palette.

Magnifier

The **Magnifier** tool zooms in on the picture to allow you to work with smaller details. You can click on a region of the picture or select from one of the magnification powers in the options box.

Pencil

The **Pencil** tool makes freehand drawings possible. To draw, click and drag the pencil cursor around the screen.

Brush

The **Brush** tool is similar to the **Pencil** tool except that you can select from several brush shapes in the options box.

Airbrush

The **Airbrush** tool sprays a pattern as you drag the tool around the picture. The options box provides three selections to let you control the width of the spray effect.

Figure 7.11 is a picture that I drew by using the **Fill**, **Pencil**, **Brush**, **Airbrush**, and **Eraser** tools.



Figure 7.11 A freehand picture.

Text

The **Text** tool lets you define a rectangle into which you can type text. You can resize the rectangle by dragging its corners and sides. You can move the rectangle by dragging it around by the points on its edges. A Fonts dialog box allows you to select the font, point size, boldface, italics, and underscoring. Figure 7.12 shows the text box and the Font dialog box.

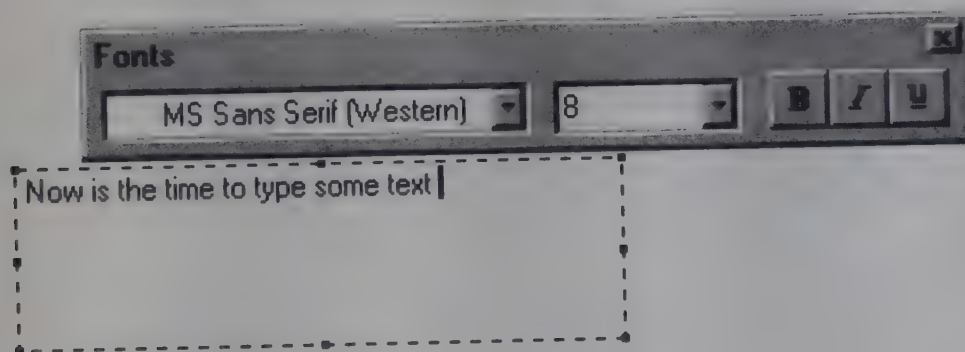


Figure 7.12 Entering text into a picture.

When you have finished entering the text and have selected a different tool, the Font dialog box closes and the dashed line rectangle that defines the text entry box clears. The text then becomes simple graphical renderings of the letters in the font.

Line

The **Line** tool draws straight lines. You drag the cursor from one end of the line to another.

Curve

The **Curve** tool draws curves. You draw a straight line, and then you move the mouse cursor and drag it to warp the straight line and form it into the shape you want.

Rectangle

The **Rectangle** tool draws rectangles. You drag from one corner of the rectangle to the opposite corner. The width of the edges is based on the most recent line width selection. The options box provides three ways to draw the rectangle. The first selection draws the rectangle using the foreground color for the edges with a transparent inner area. The second selection fills the inner area with the background color. The third selection draws a solid rectangle from the background color.

Polygon

The **Polygon** tool draws a many-sided shape formed from straight lines. You begin by drawing a straight line. Then you move the cursor to another point and click to draw the next line. You repeat this procedure until you have drawn the last line of the polygon by connecting to the original first point of the first line. The options box has the same three selections that the **Rectangle** tool uses.

Ellipse

The **Ellipse** tool draws an ellipse. You drag from one side of the ellipse and use the cursor to define the shape. The options box has the same three selections that the **Rectangle** tool uses.

Rounded Rectangle

The **Rounded Rectangle** tool works like the **Rectangle** tool except that the corners of the rectangle are rounded.

Figure 7.13 is a picture formed from the line and shape tools.



Figure 7.13 A picture.

PHONE DIALER

Phone Dialer is a productivity tool in the Accessories folder. It uses your modem to dial phone numbers for you. For this to work, you must have a modem connected and installed, and you must have a telephone connected to the same phone line that the modem is connected to.

To be really useful, Phone Dialer should have a shortcut on your desktop or in a folder that is often open. Figure 7.14 is the Phone Dialer application window.

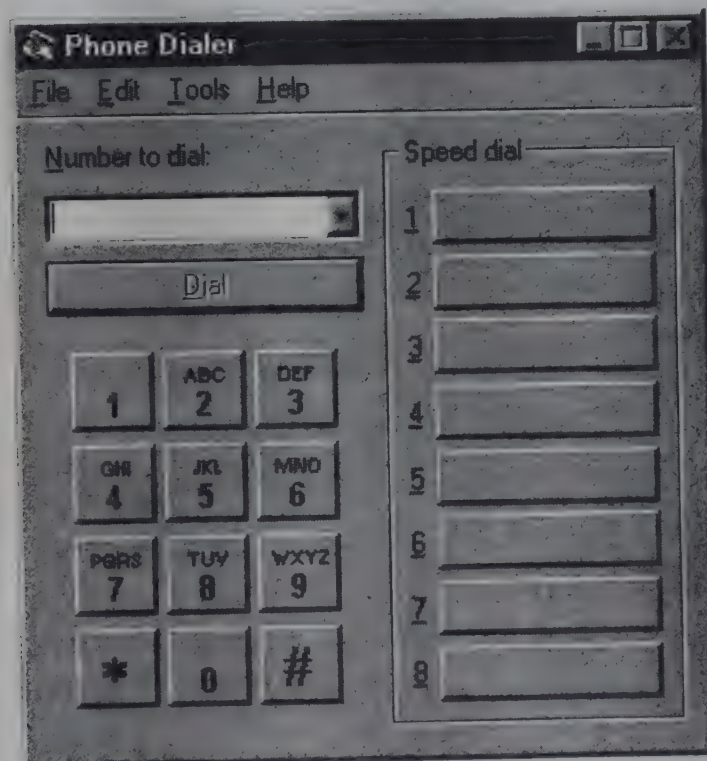


Figure 7.14 Phone Dialer.

Dialing

The application window has a drop-down list box containing the most recently called numbers. You can type a number to call, click the keypad buttons to enter a number to dial, or choose one of the speed dial entries. When you enter a number, you must click the **Dial** button to dial it. When you use a **Speed Dial** button, the number is dialed immediately.

Adding a Speed Dial Entry

Choose **Speed Dial** on the Edit menu. The Edit Speed Dial dialog box in Figure 7.15 pops up.

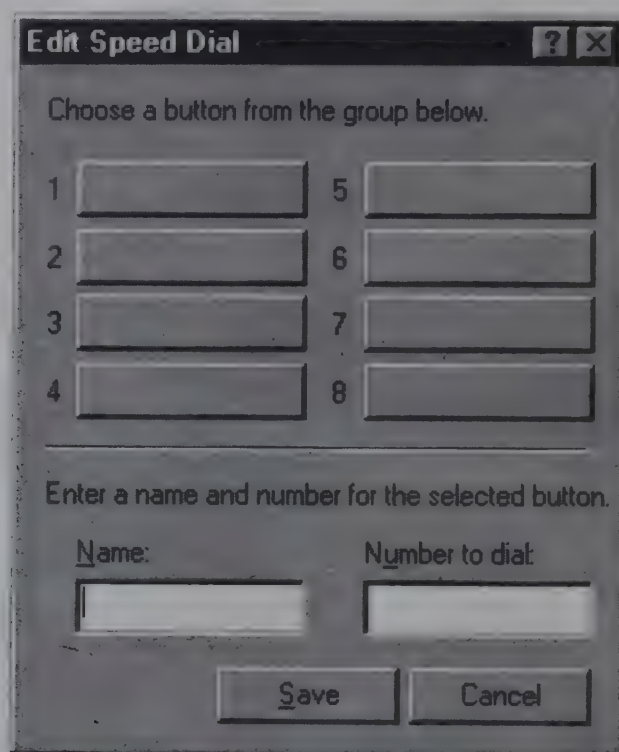


Figure 7.15 Edit Speed Dial dialog box.

Choose one of the blank buttons. Type a name into the **Name** control. Type the phone number for the name into the **Number to dial** control. Repeat those steps for each of the numbers you want on your speed dial buttons. Choose the Save command. Now you can dial these numbers from your computer by choosing the **Speed Dial** buttons on the Phone Dialer application window.

WORDPAD

WordPad is a single-document word processor with many of the features of the high-end Word for Windows from the Microsoft Office suite of applications. WordPad will read and edit WordPad documents in Word for Windows 6.0 format,

so even if you do not have the bigger program, you can work with documents that were prepared in Word. You can also create documents that Word users can read and modify.

If Word for Windows is not on your computer, then Word documents are associated with WordPad, and double-clicking one of them will launch WordPad.

Figure 7.16 is the WordPad application window.

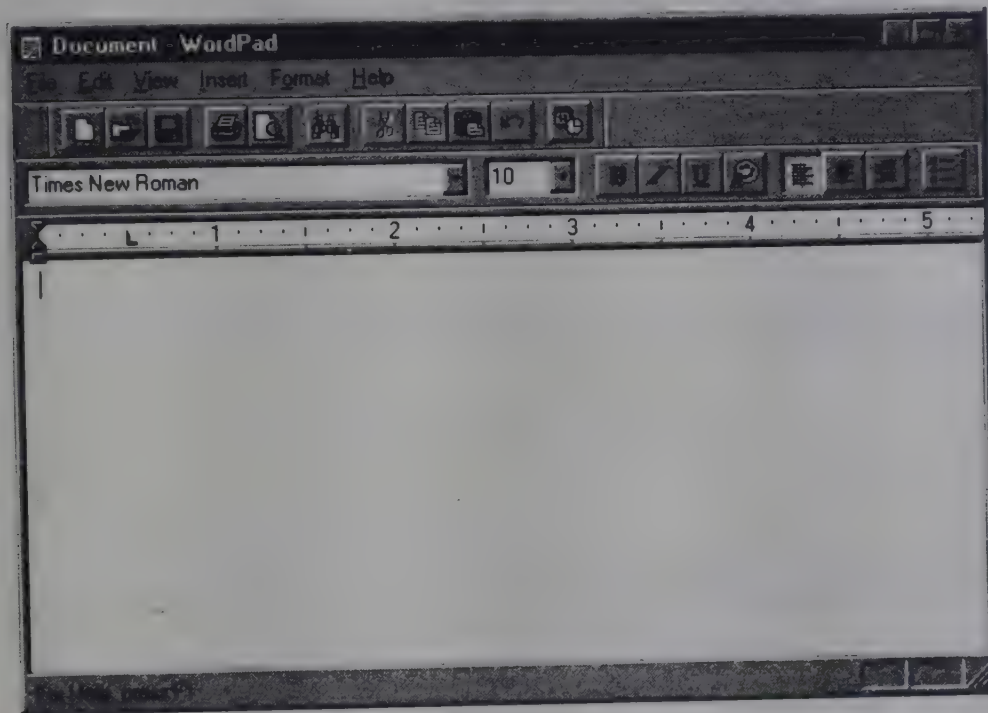


Figure 7.16 WordPad.

You used WordPad in earlier chapters to learn about how Windows 95 applications work.

Typing a Document

When you start WordPad, you see the WordPad application window shown in Figure 7.16. The vertical bar in the upper-left corner of the work space is the insertion point, where you type text and insert graphics. You can move the insertion point around within the document after you enter some text by using the mouse or the keyboard.

The Margins

Type some text into the document. The first thing you learn is that the lines go beyond the right margin of the window before a word wraps around. Figure 7.17 shows this condition.

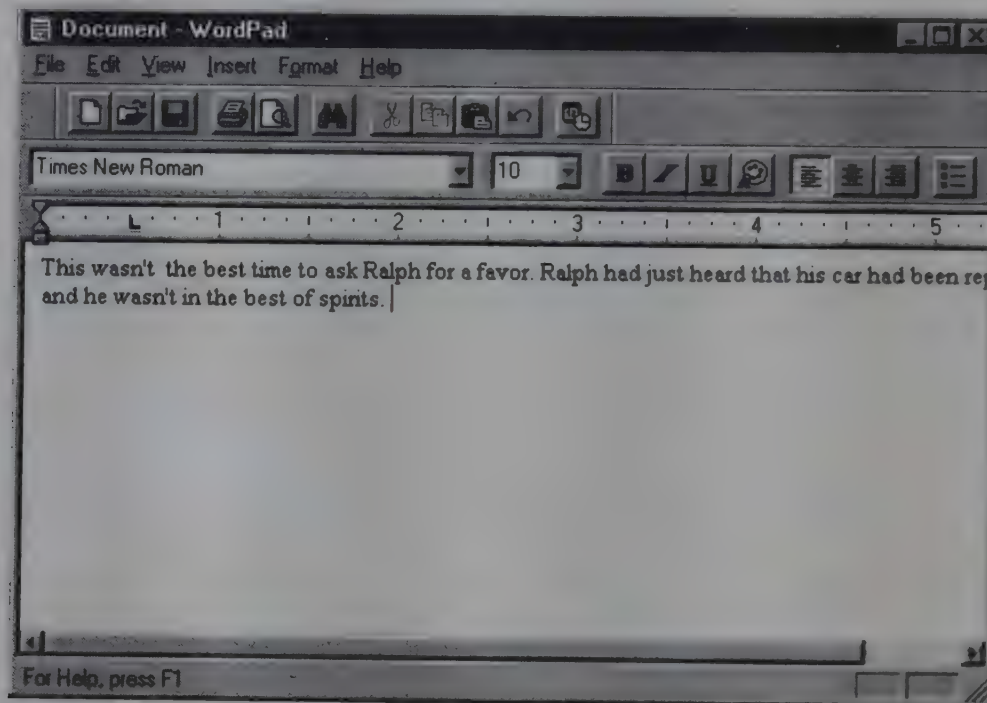


Figure 7.17 Text exceeding the borders of application window.

WordPad orients its display to the printed page, trying to show the document on the screen as it will appear on paper. The initial right and left page margins are set to 1.25 inches on 8.5x11 inch paper, and the default screen font for some printers needs more than a window's width to display six inches of text.

Most people prefer to view the entire line when they type. WordPad's horizontal scrolling refreshes the screen in an uncomfortable way whenever you type on the part of the line that is beyond the right border of the application window. You can resize the WordPad window so that all the text is visible as shown in Figure 7.18. The width of the window needed to display all the text depends on which font you use and the page layout.

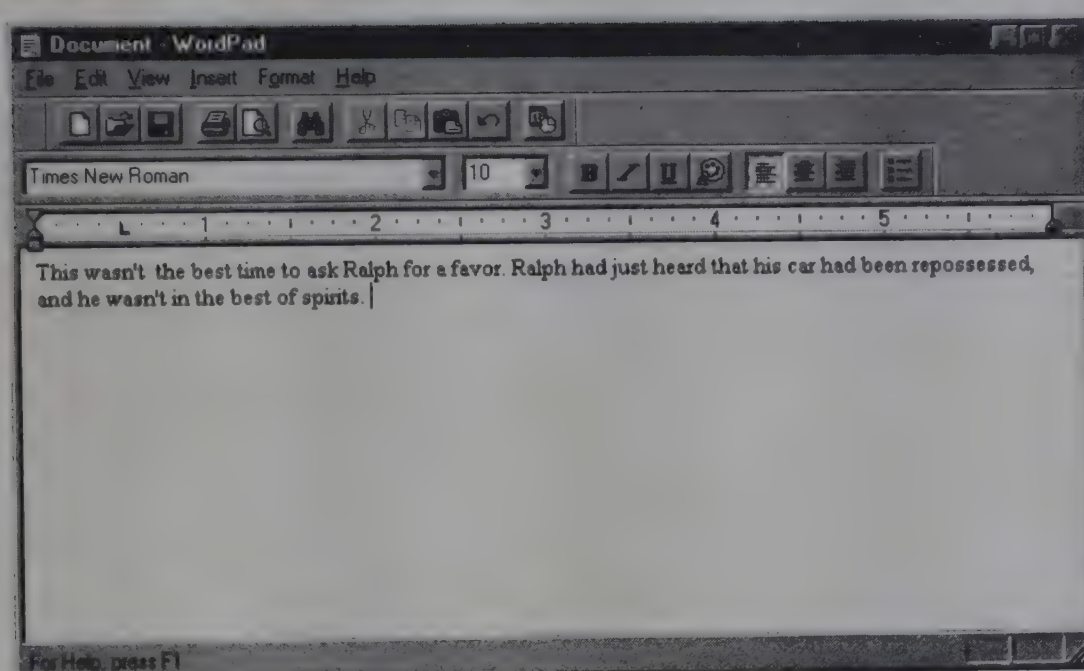


Figure 7.18 WordPad resized.

Moving Around in the Document

After you have some text typed in, try moving the cursor around in the text that you have entered. Table 7.5 contains the keystrokes that move the cursor.

Table 7.5 *WordPad cursor movement keystrokes.*

KEYSTROKE	MOVES THE CURSOR:
Up, Down, Left, Right	One character position
Ctrl+Right/Left	One word right and left
Home, End	To the beginning and end of the line
Ctrl+PgUp/PgDn	To the top and bottom of the window
Ctrl+Home/End	To the beginning and end of the document

Selecting Text

Many of the WordPad commands operate on a selected block of text, which is marked in the usual ways. WordPad provides additional ways to mark text. When you move the mouse cursor to the left margin of the text, the cursor changes to a

diagonal arrow that points to the upper right. When the cursor has this form, you can select text in several ways. Table 7.6 explains these operations.

Table 7.6 *Selecting text from the left margin.*

TO SELECT:	DO THIS:
A line	Click once with the mouse cursor at the line.
Adjacent lines	Click the first line and drag the cursor to the last. Or select the first line, move to the last line, hold the Shift key down, and click.
A paragraph	Put the cursor next to any line and double-click.
The document	Hold the Ctrl key down and click.

Moving and Copying Text

You move and copy blocks of text by selecting the block and then cutting or copying the text to the clipboard and pasting it into its new location.

You can also copy a selected block by dragging and dropping it to its new location.

Deleting Text

Delete a selected block of text by pressing the **Del** key. The **Undo** command on the Edit menu recovers the most recently deleted block of text.

Finding and Replacing Text

WordPad has commands that let you search the document for a match on a text string. You can also tell WordPad to replace instances of a text string with a substitute text string.

Find Text

You search a document for text by choosing the **Find** command on the Edit menu. A search proceeds through the entire document from the current location to the end, wrapping around to the beginning and back to the current location. The Find dialog box shown in Figure 7.19 is where you enter the word or phrase you are searching for.

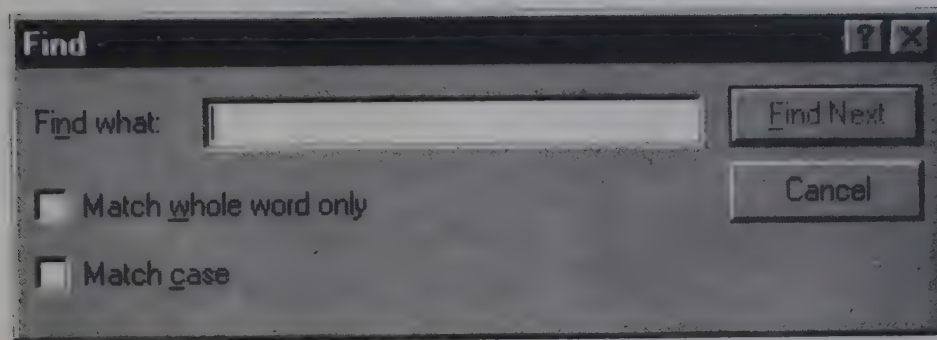


Figure 7.19 Find dialog box.

The **Match whole word only** checkbox specifies that you want matches on whole words only; a search for the word *phone* will not match the word *phonetic*, for example. If you select the **Match case** checkbox, the match will occur only if the text matches the **Find what** text box exactly with respect to case.

When you have found the word, you can use **Find Next** to find subsequent instances of the search text. You can also use the **Find Next (F3)** command on the Edit menu to repeat the search after the dialog box is closed.

The Find dialog box remains in view even when it is no longer the active window. To erase it, click **Close**.

Replace Text

The **Replace** command on the Edit menu allows you to change instances of a text string to a different string. Figure 7.20 is an example of the Replace dialog box for changing “phone” to “telephone.”

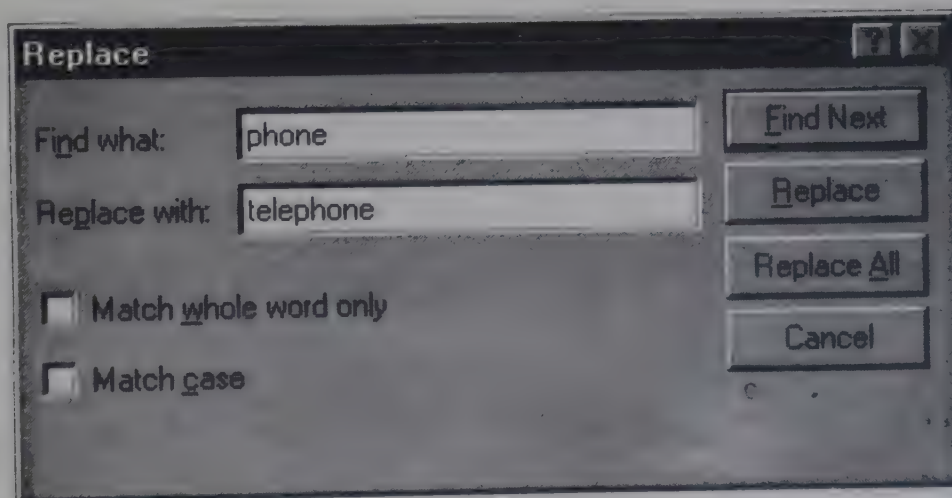


Figure 7.20 Replace dialog box.

You can choose **Find Next** to proceed to the next match, **Replace** to change the current match and then proceed to the next match, and **Replace All** to change every match in the document.

The Replace dialog box remains in view even when it is no longer the active window. To erase it, click **Close**.

The Ruler

WordPad displays a ruler at the top of the workspace. You can use the mouse to change the document format by changing settings in the ruler. You display the ruler with the **Ruler** toggle command on the View menu.

Indenting with the Ruler

The small box and two arrow symbols at the left end of the ruler control indenting. You slide them with the mouse. Sliding the downward-pointing arrow changes the indent for the first line of the selected paragraph. Sliding the upward-pointing arrow changes the indent for all other lines in the paragraph. Sliding the box changes both indent settings together.

Changing Tabs with the Ruler

Set a tab stop by clicking in the ruler. Clear a tab stop by dragging it off either end of the ruler.

Formatting

You can select a font and font size from the Format Bar. You can specify that the font be displayed in boldface, italics, with underscores, and in chosen colors by pressing the associated buttons on the Format Bar. The Format Bar also has buttons for setting justification and for setting bullets into the left margins of selected text.

Graphics

You can integrate text and graphics into a WordPad document. Pictures must be pasted into the document from the clipboard. You cannot read a graphics file directly into WordPad. A picture occupies the entire width of the page regardless of the width of the picture itself. You cannot enter text on a line to the right or left of a picture.



CHAPTER 8

Windows 95 Help

The Windows 95 Help system has its roots in Windows 3, in which Microsoft launched the concept of a Help application that supports the operating system and the applications. Help comes from text and graphics displays in windows that are organized in a common format. Early conventions in previous versions of Windows provided complete system and application documentation in the Help databases. Windows 95 changes the emphasis. The Help system is seen more as a way to provide terse, referential information to users who already understand much of their computing environment. Full documentation is still provided electronically, but it comes from multimedia databases on CD-ROMs rather than through the Help application.

This chapter explains how to use the Help system. You will learn about:

- Getting help for Windows 95
- Getting help for applications
- Running the Windows 95 Help application

HELP FOR WINDOWS 95

Windows 95 includes a complete Help database that contains explanations of everything on the desktop and troubleshooter dialogs that guide you through questions about problems to help you find the solutions.

The Help Menu Selection

The Start menu includes a **Help** command. When you choose it, you run the Windows 95 Help application as shown in Figure 8.1.

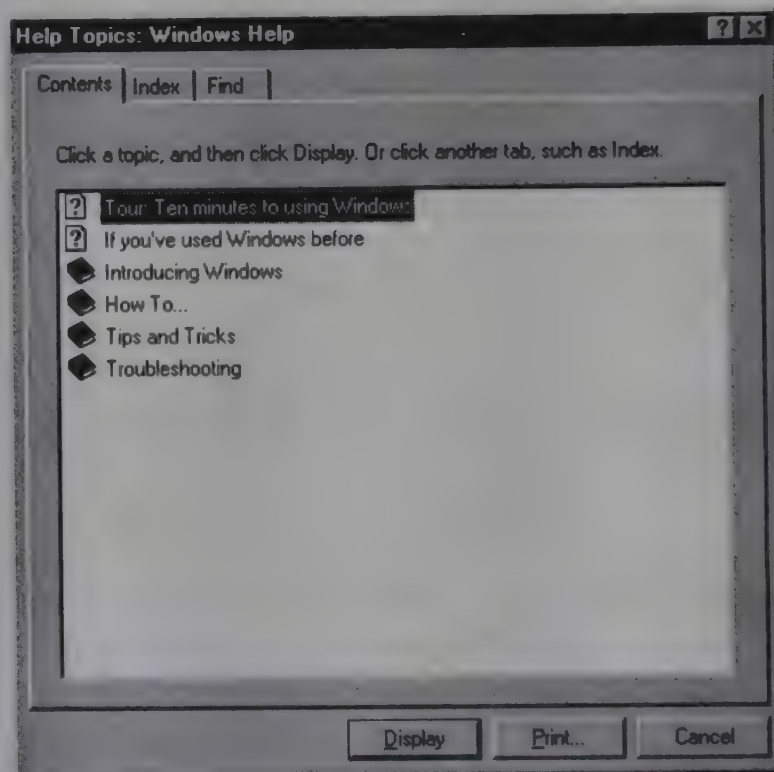


Figure 8.1 The Help application.

The Help application has three pages, which you select with the tab controls at the top of the Help application window. The pages are labeled **Contents**, **Index**, and **Find**. We'll discuss them later.

From the Desktop

You can open the Help application from the Windows 95 desktop by selecting the desktop and pressing **F1**.

HELP FOR APPLICATIONS

Each Windows 95 application has its own Help database with information specific to the application.

Windows 95 supports the complex Help databases of Windows 3.x applications, but help for new applications reflects the new conventions for smaller, more concise help files.

You can get help for an application by choosing the **Help Topics** command on the application's Help menu. Figure 8.2 shows the Help application window that runs when you choose the **Help Topics** command on WordPad's Help menu.

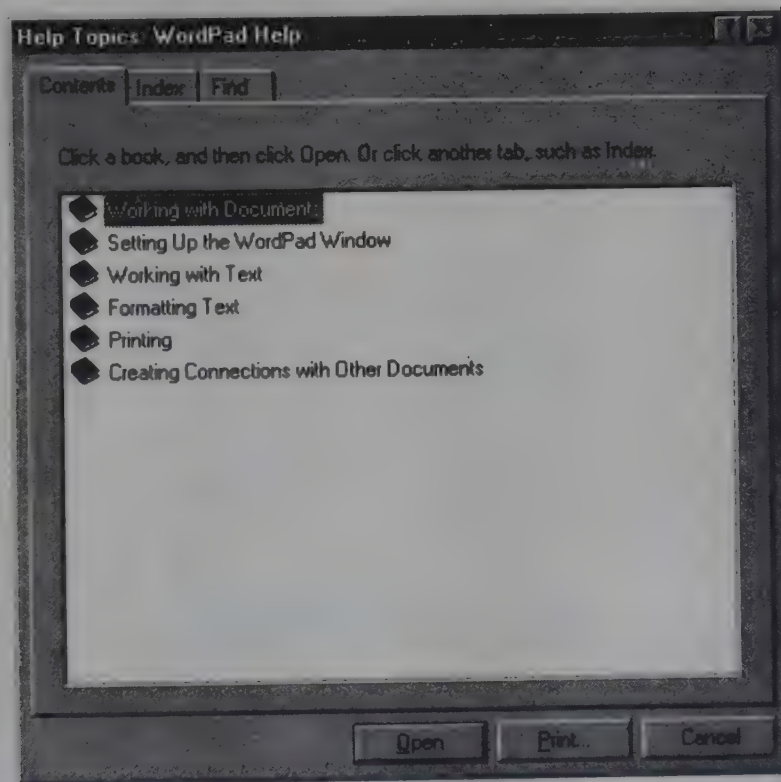


Figure 8.2 WordPad's Help.

You can also get help for an application by pressing **F1** at any time. Some applications open the Help application as shown in Figure 8.2; others open a momentary window with a static text display. Figure 8.3 shows the Phone Dialer application with a momentary Help window that pops up when you press **F1**.

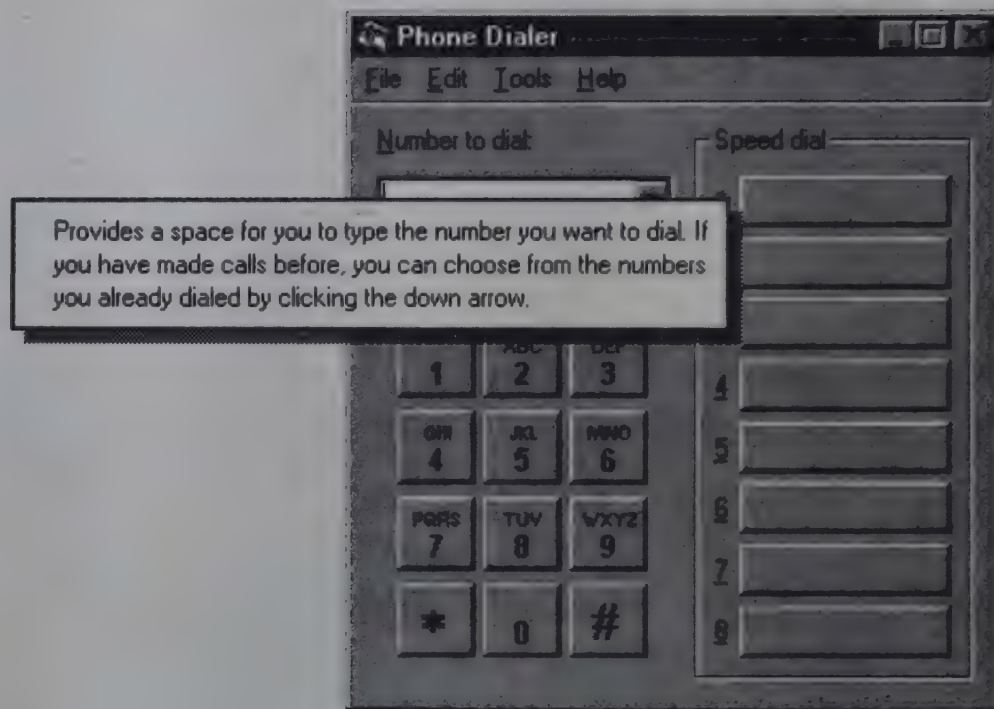


Figure 8.3 Momentary Help window.

As soon as you press a key or click the mouse, the momentary Help window closes.

SETTING UP THE HELP APPLICATION

The first time you request help for Windows 95 or an application, you see the animated dialog box shown in Figure 8.4.

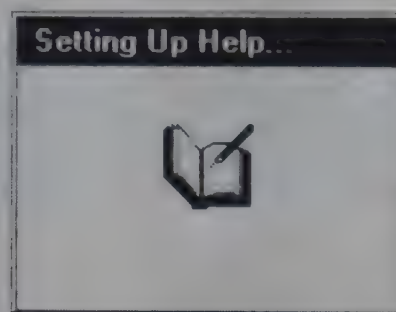


Figure 8.4 Setting Up Help dialog box.

The Setting Up Help dialog box stays on the screen while the Help application builds the Help database for the application. The dialog box is animated. The pencil writes lines, and the pages turn. This dialog box displays the first time you get help for an application. Subsequently, the Help database is set up and ready to use.

HELP TOPIC CONTENTS

The **Contents** page on the Help application contains selections with book icons. To open a book, double-click the icon. Figure 8.5 shows Notepad's **Help Contents** page with a book open.

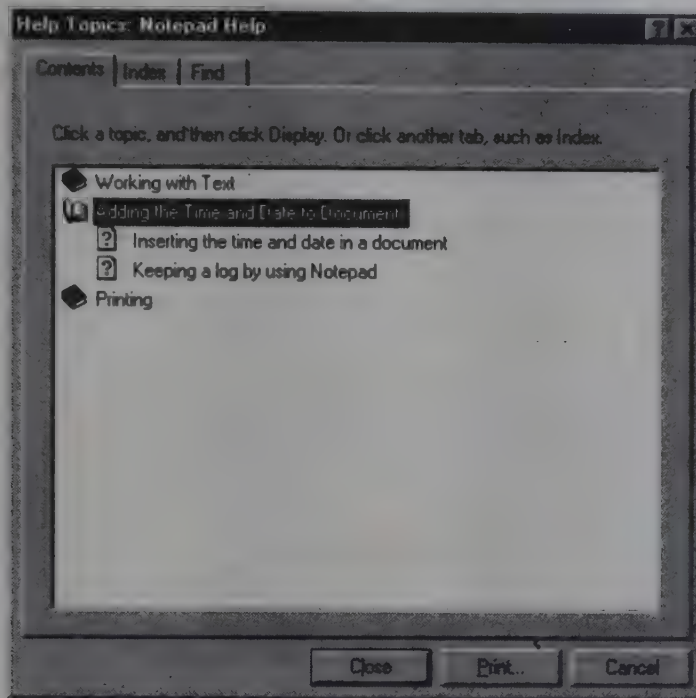


Figure 8.5 An open book on the Contents page.

Opening a Book

To open a book with the keyboard, select the book by using the up and down arrow keys and press **Enter**.

Closing a Book

Close a book by using the same procedure as opening it—press **Enter** while the open book is selected, or double-click the open book icon.

Topics

An open book lists topics. Choose a topic by double-clicking its icon or by selecting the topic and pressing **Enter**. The Help application window closes, and the topic window opens. Figure 8.6 shows a topic window from Notepad's Help database.

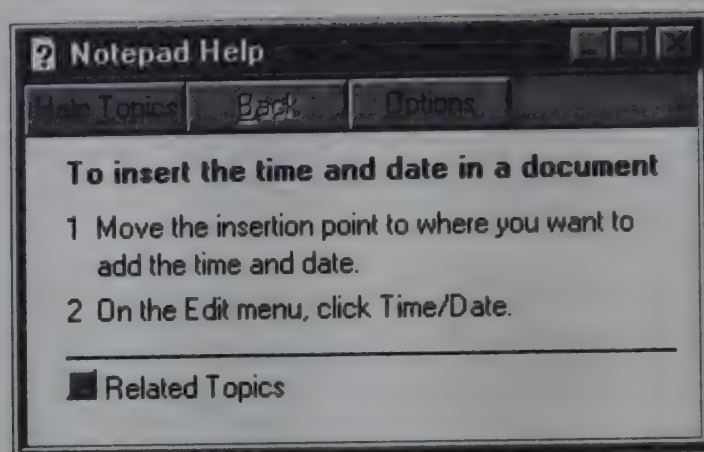


Figure 8.6 A Help topic window.

The small button with the **Related Topics** label is one way that the topic window provides fast linkage to other topics in the database. When you click it, you see a list of other topics from which you can choose. Figure 8.7 shows the Topics Found dialog box.

By selecting one of the topics in the list and choosing the **Display** command, you can change the topic window to display the new topic. When you navigate Help topics this way, the Help application activates the **Back** button on the topic window so that you can step back to the original selected topic.

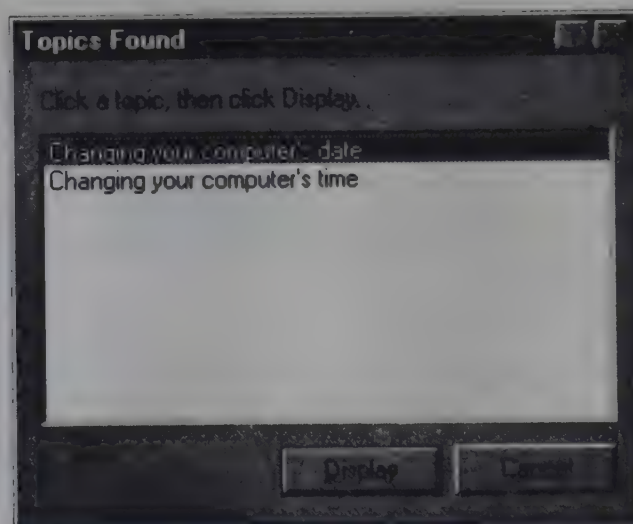


Figure 8.7 The Topics Found dialog box.

Help Topics Button

The **Help Topics** button in the topic window redisplay the closed Help application window.

Options Button

The **Options** button opens a menu with several selections: **Annotate**, **Copy**, **Print Topic**, **Font**, **Keep Help on Top**, and **Use System Colors**.

Annotate

The **Annotate** command allows you to annotate a help topic. The command opens the Annotate dialog box shown in Figure 8.8.

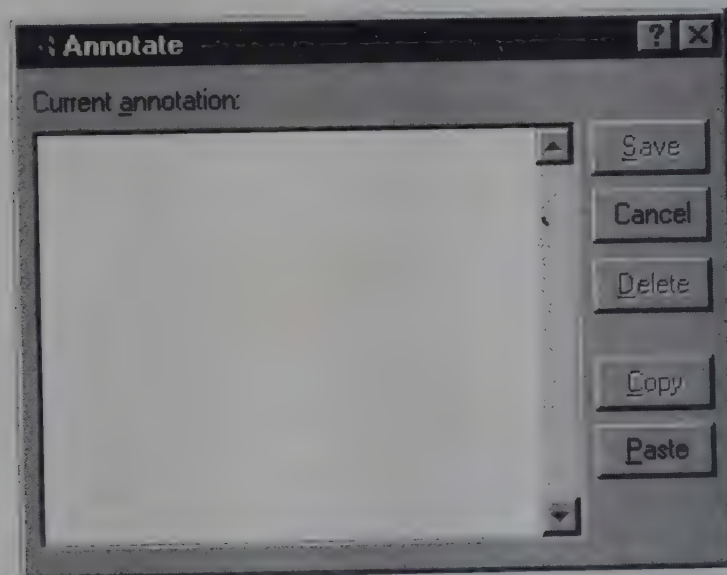


Figure 8.8 The Annotate dialog box.

Type some text into the **Current annotation** text control and choose **Save**. The topic window gains a paperclip icon to indicate that the topic is annotated, as Figure 8.9 shows.

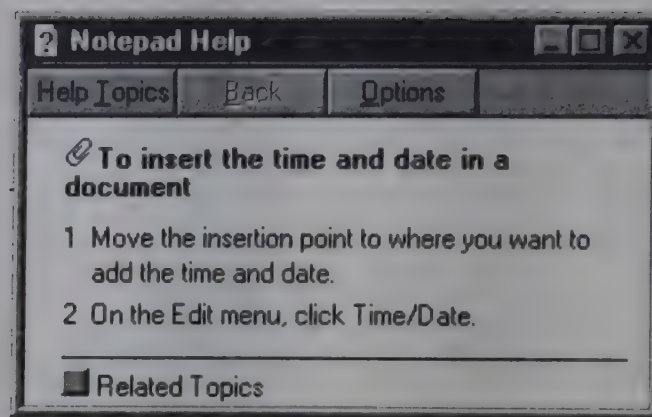


Figure 8.9 An annotated Help topic.

Whenever you display the Help topic, you can click the paperclip icon to open the Annotate dialog box and read, modify, and delete the annotation.

Copy

The **Copy** command copies the topic's text into the clipboard.

Print Topic

The **Print Topic** command prints the topic.

Font

The **Font** command opens a cascaded menu with mutually exclusive **Small**, **Normal**, and **Large** toggle commands. **Normal** is the default.

Keep Help on Top

The **Keep Help on Top** command opens a cascaded menu with three mutually exclusive toggle commands: **Default**, **On Top**, and **Not On Top**. These selections allow you to keep the topic window on top of whatever else is running. The **Default** setting uses a setting built into the Help database by whomever prepared the database. The **On Top** option keeps the topic always on top. The **Not On Top** option has the topic window on top only when the window has the focus.

Use System Colors

This toggle command lets you specify that topic windows use the system colors rather than their own color scheme.

HELP TOPIC INDEX

The Help application's **Index** page allows you to search for a topic based on an index provided by the application being helped. Figure 8.10 shows the **Index** page.

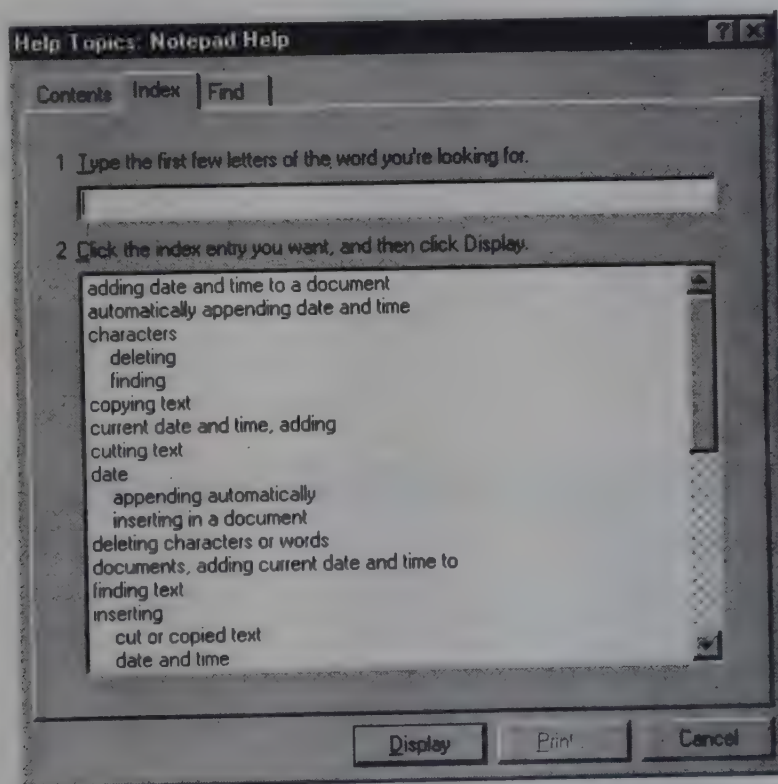


Figure 8.10 The Help Index page.

You type some text into the text box, and the Help application positions the index entry list to the indexed topic that best matches what you type. When you have found a topic in the list, select it and choose **Display** to view its topic window.

FINDING HELP TOPICS

The Help application's **Find** page allows you to construct word and phrase queries to locate Help topics. This feature is handy to use when you are unsure of the indexed value and don't know the topic's title in the Contents list. Before you can use this feature for the first time, the Help application builds a word list to use in the search. Figure 8.11 shows the Find Setup Wizard, which builds the word list.

You can choose to build minimum or maximum search capabilities. If your choice turns out to be the wrong one, you can rebuild the list later. In most cases, the recommended **Minimize database size** choice works well. Since it can take quite a bit of time to create the database, depending on your system, Find may not be the fastest method to the help you seek.

After you have built the word list, the **Find** page can be displayed. Figure 8.12 shows the Help application's **Find** page.

You can select a word from the number 2 list or type one into the number 1 control. The number 3 list shows the topics that match your search. Select one and choose **Display** to open the matching topic window.

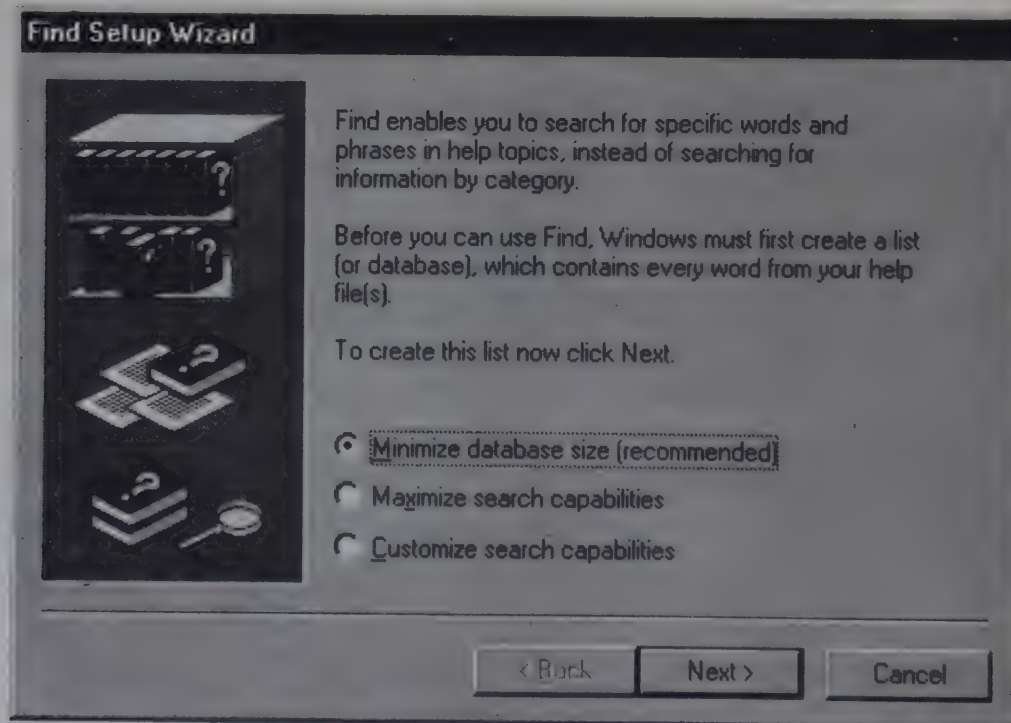


Figure 8.11 The Find Setup Wizard.

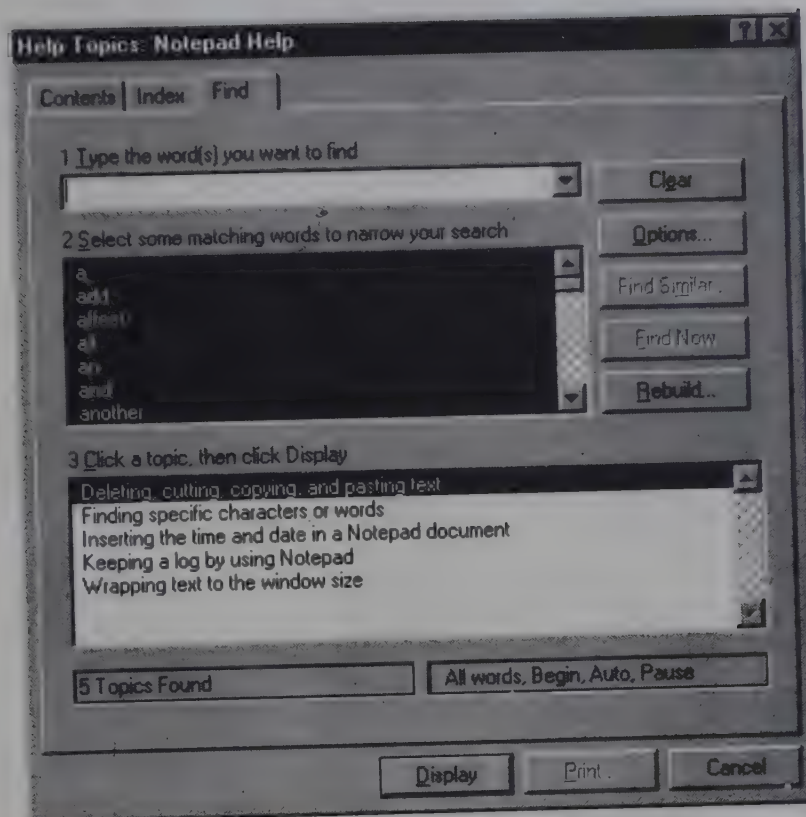


Figure 8.12 The Find page.



CHAPTER 9

Control Panel: Modifying Windows 95

Control Panel is the Windows 95 application that you use to maintain your system. It lets you install and remove hardware and software and control critical system settings.

We will discuss only a few of the Control Panel operations in this chapter. Other operations that support networks, modems, and multimedia devices are discussed in the chapters devoted to those subjects. In this chapter, you will learn about:

- Plug and Play
- Setting the date and time
- Installing and removing devices
- Fonts
- Sounds
- The Device Manager

PLUG AND PLAY

Plug and Play is a hardware specification intended to take the worry out of installing new devices. In the past, people who installed their own hardware had to deal with conflicting IRQs, DMAs, port addresses, on-board memory addresses, and so on. Windows 95 does not eliminate that worry for those of you who have traditional hardware. But a new hardware specification, called Plug and Play and abbreviated PnP, is intended to automate the processes that assign these variables when a device is installed.

Here's the idea. You trudge down to your local computer store and buy a new widget that conforms to the PnP specification. You take that widget home or to the office and plug it into your PC. When you turn the PC on, Windows 95 boots up with everything it needs to use the new device. Sometime later you decide to remove the device. You power down the PC, remove the device, and power up. Windows 95 no longer expects the device to be there and has deactivated any applications or system services that expect the device to be installed and operational.

That's how PnP is supposed to work. The goal is certainly achievable—the Macintosh has worked that way since its inception. But the PC is an open architecture, whereas the Mac is closed. Designers of PC add-on products must agree to design to a more structured architecture to comply with PnP. Whether enough hardware manufacturers will redesign and retool to the new specification remains to be seen. If computer users—people like you—insist on devices that are PnP-compliant, the specification will become a *de facto* standard. If you do not insist but continue to buy whatever the marketplace offers, the PnP idea could fade into obscurity, like many other good ideas that never got off the ground.

OPENING THE CONTROL PANEL

The Control Panel is presented as a folder full of icons. To modify the system, you open the Control Panel and then choose an icon from the folder. Choosing an icon opens a dialog box that contains the settings for the device or devices. Sometimes a Control Panel selection launches a wizard application.

You can open the Control Panel folder from the **Settings** command on the Start menu and from within My Computer. Several of the Control Panel applications can be launched from other places in the system, too. For example, the **Network** icon in the Control Panel launches the same dialog box that you get when you right-click the Network Neighborhood and choose **Properties**. Many of the device properties dialog boxes can be opened from within the Control Panel's Device Manager as well as from their own Control Panel icons.

Figure 9.1 is the Control Panel.



Figure 9.1 Control Panel.

SETTING THE DATE AND TIME

If the internal battery in your PC never wears out and if your PC's time-of-day clock is more accurate than most, you might never need to use this function. You probably won't be so lucky, however, and once in a while you'll need to change the date or the time. Double-click the **Date/Time** icon in the Control Panel to open the Date/Time Properties dialog box shown in Figure 9.2.

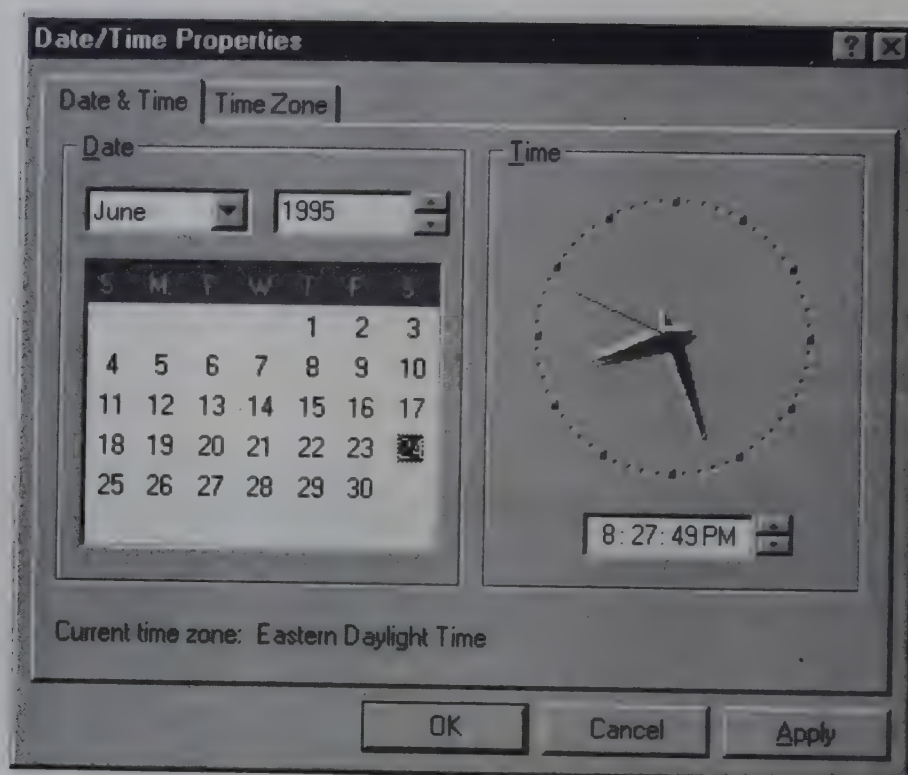


Figure 9.2 The Date/Time Properties dialog box.

You can also open the Date/Time Properties dialog box by double-clicking the time display at the right end of the Taskbar.

To change the date, click on the new date in the calendar display. Use the drop-down list box to change the month. Use the **Date** spin buttons to change the year, and the **Time** spin buttons to change the time of day.

The **Time Zone** page, which you display by selecting the **Time Zone** tab, is the same page that you used in Chapter 2 during the installation procedure to establish your time zone.

INSTALLING SOFTWARE

To add an application to Windows 95, double-click the **Add/Remove Programs** icon in the Control Panel. You see the Add/Remove Programs Properties dialog box shown in Figure 9.3.

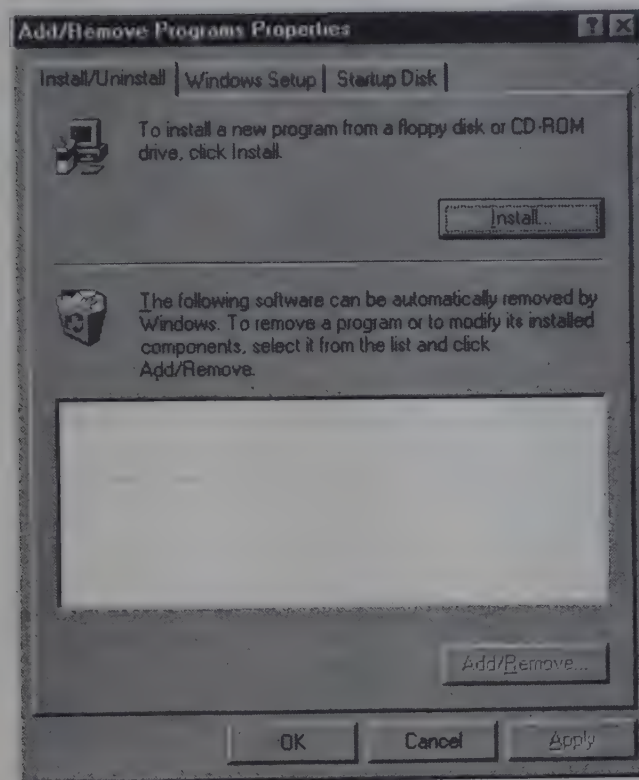


Figure 9.3 The Add/Remove Programs Properties dialog box.

The dialog box has three pages: **Install/Uninstall** to install or uninstall Windows applications, **Windows Setup** to install or remove Windows 95 applets, and **Startup Disk** to build a Windows 95 emergency startup disk.

Install/Uninstall

The **Install/Uninstall** page, shown in Figure 9.3, assumes that you have an application that conforms to the standards for installing Windows 95 applications. This means that the application installs from a program named **setup.exe** in the root directory of a diskette or CD-ROM.

Installing a Windows 95 Application

Put the application's distribution diskette or CD-ROM in its drive and choose the **Install** command. You will see the dialog box shown in Figure 9.4.

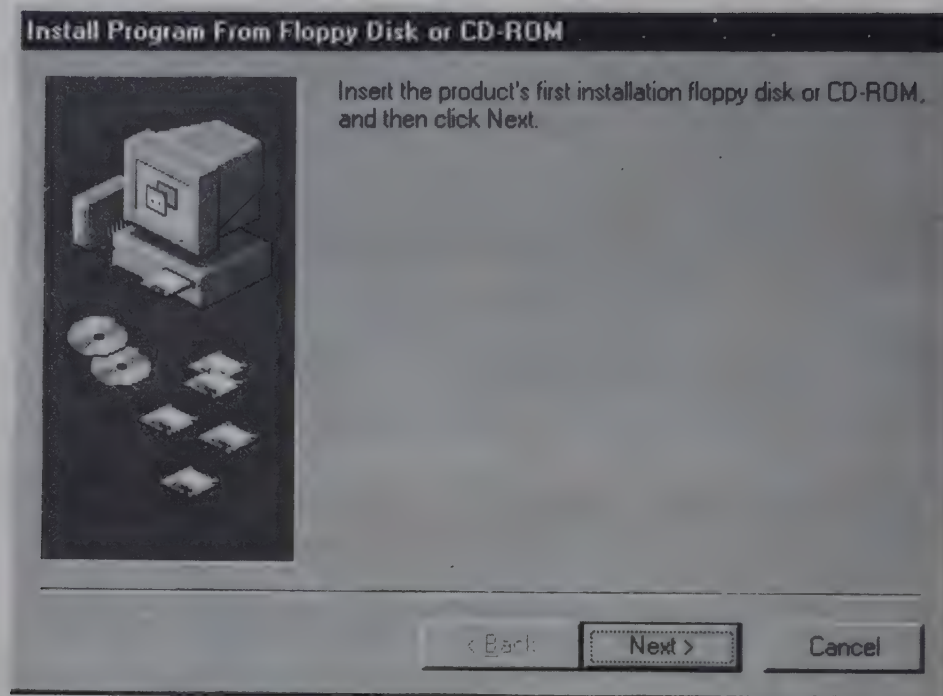


Figure 9.4 Install Program dialog box.

Choose **Next**. The program searches the diskette and CD-ROM drives for a setup program and displays the Run Installation Program dialog box shown in Figure 9.5 when a setup program is found.

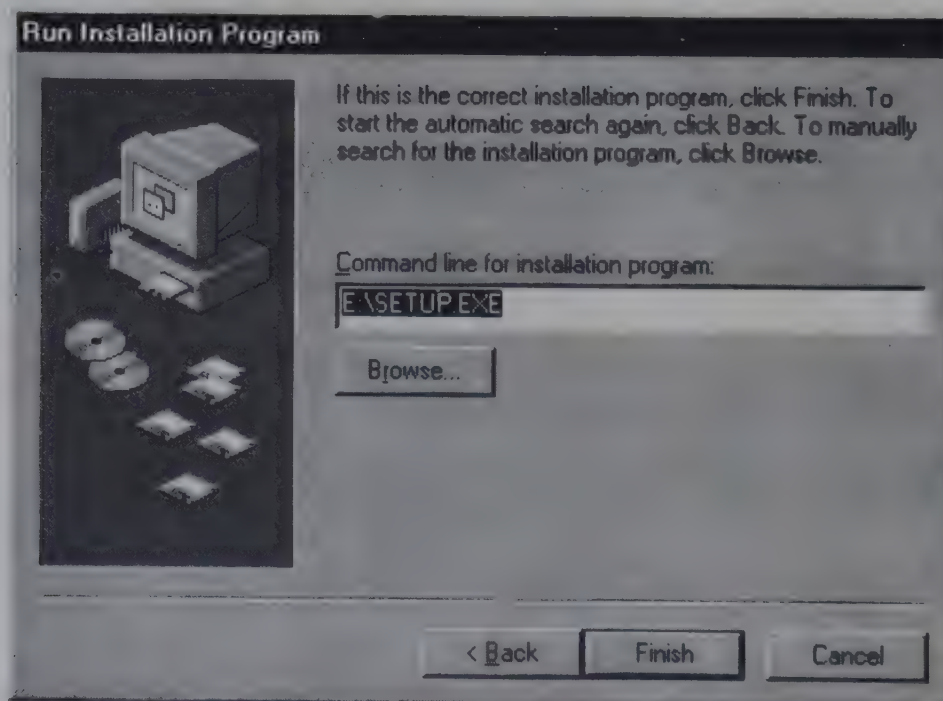


Figure 9.5 Run Installation Program dialog box.

Choose **Finish** to launch the application's setup program.

Uninstalling a Windows 95 Application

The list on the **Install/Uninstall** page is empty in Figure 9.3. When populated, the list shows applications that have been installed and that conform to standards for uninstalling Windows 95 applications. To uninstall such an application, select it from the list and choose **Add/Remove**.

Windows Setup

The **Windows Setup** page in the Add/Remove Programs Properties dialog box allows you to add options that were omitted during setup and to remove options that were included during setup. Figure 9.6 is the **Windows Setup** page.

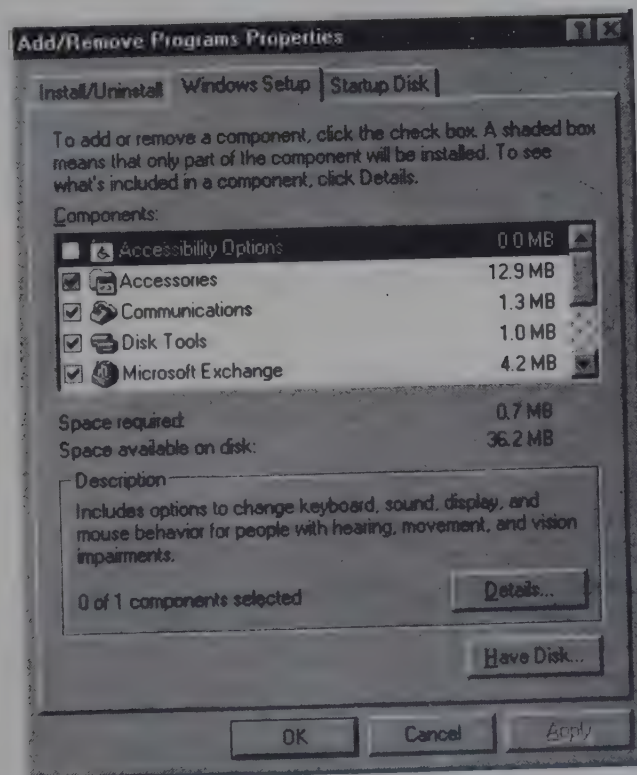


Figure 9.6 The Windows Setup page.

The **Components** list contains an entry for each category of program that was or could have been installed by the setup program. The text in the **Description** box specifies how many components are in the category and how many of them are selected. If none is selected, the category's checkbox in the list is not checked. Select a category and click **Details** to display the category's components. Figure 9.7 shows the Accessories category details.

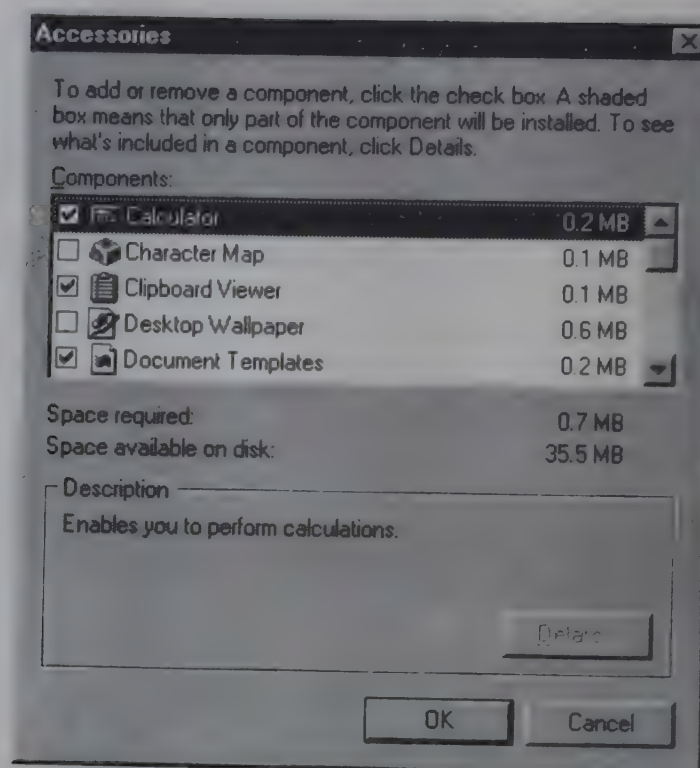


Figure 9.7 Accessory details.

When you first open the detail dialog box, checked items are already installed. You can uncheck the items you want to remove and check the items you want to install. Choose **OK** when the list is the way you want it. The detail dialog box closes, and you can select another category from the **Windows Setup** page. When all the categories are selected with the components you want in your system, choose **OK** in the Add/Remove Properties dialog box. The Control Panel installs and removes the appropriate components.

Startup Disk

The **Startup Disk** page on the Add/Remove Programs Properties dialog box allows you to build an emergency Windows 95 startup disk. You had an opportunity to build this diskette during installation of Windows 95. If you built one then, you don't need to build one now. If you did not build one, now is a good time to do it. You might need it some day when Windows 95 fails to boot and you want to recover valuable data files. The startup disk boots into MS-DOS mode and allows you to work with your hard drive from the command line, perhaps to troubleshoot and correct errors that prevent Windows 95 from running properly. At the very least, it permits you to make copies of data files to transfer to another PC.

Figure 9.8 is the **Startup Disk** page.

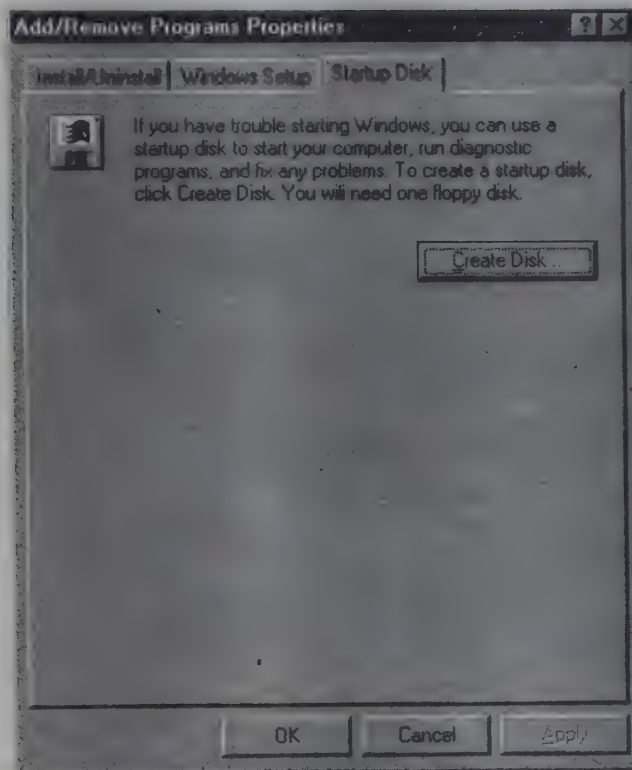


Figure 9.8 The Startup Disk page.

To build the startup disk, click the **Create Disk** button. You need the original Windows 95 CD-ROM or diskettes to proceed. The Insert Disk dialog box shown in Figure 9.9 prompts you to insert the CD-ROM. If you installed from diskettes, the dialog box requests one of the Windows 95 installation diskettes instead.

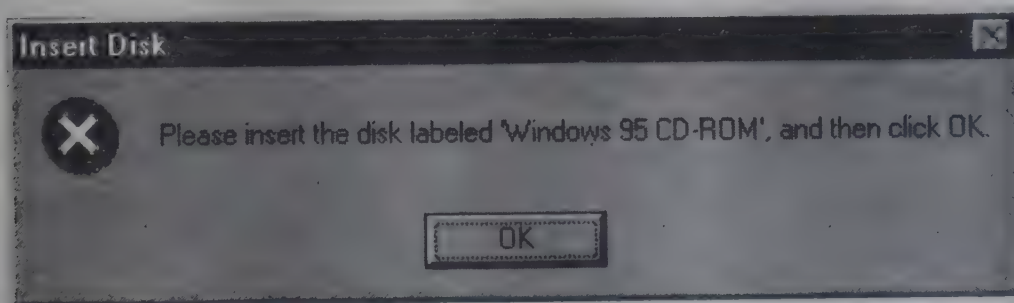


Figure 9.9 Insert Disk dialog box.

After the system finds the Windows 95 disk, it prepares the startup disk files. If you installed Windows 95 from diskettes, the system prompts you to insert installation diskettes as it needs them. When it is ready to build the startup disk, the system displays the Insert Disk dialog box shown in Figure 9.10.

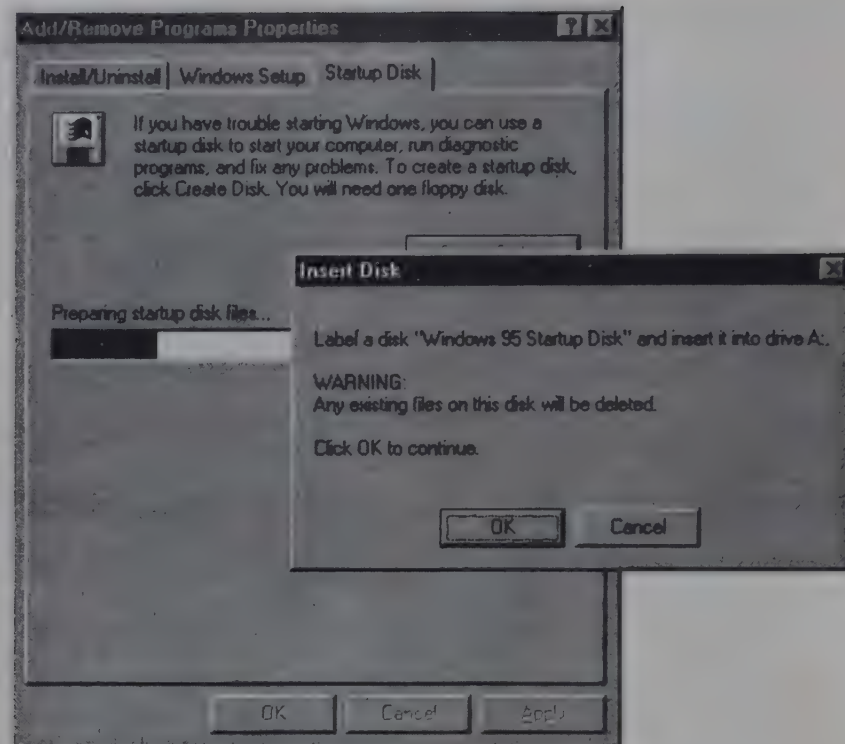


Figure 9.10 Insert Disk dialog box.

Insert a diskette into drive A: and click **OK**. When the slider bar on the **Startup Disk** page is at 100%, click **OK** or **Cancel** to close the Add/Remove Programs Properties dialog box. You can use the diskette to start Windows 95 by putting it into the A: drive and booting your PC.

ADDING, CONFIGURING, AND REMOVING DEVICES

If you are one of the lucky ones, someone else configured your PC and installed Windows 95, and you never need to make any changes. Most likely, however, you are not so lucky. At one time or another you will add or replace some hardware without the benefit of Plug and Play. Few of us can resist adding faster devices such as modems and display adapters when they become available. At other times we want to change the way things look—wallpaper, screen savers, screen resolution—for a change of pace, to break the monotony, just for the fun of it. The Control Panel includes applets to manage the installation, removal, and configuration of devices.

Display

To modify your display characteristics, double-click the **Display** icon on the Control Panel. You will see the Display Properties dialog box shown in Figure 9.11.

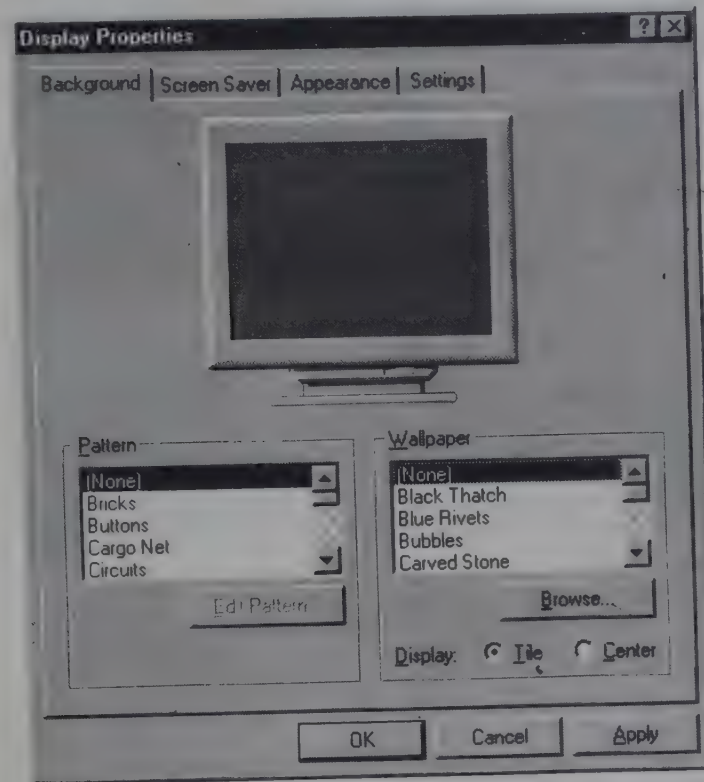


Figure 9.11 The Display Properties dialog box.

The Display Properties dialog box has four pages: **Background**, **Screen Saver**, **Appearance**, and **Settings**. If you've installed a video card with extra features, you may see more than this. Consult your video card documentation.

The Background Page

The **Background** page lets you configure what displays on the desktop under the taskbar, windows, and icons. You can choose from the **Pattern** or **Wallpaper** list boxes. A pattern is a fixed, repeated pattern. Wallpaper is a graphical image built from any bitmapped graphics file in the standard Windows .BMP format. The **Wallpaper** list includes standard wallpapers that come with Windows 95; you can use **Browse** to search your disk system for other images. Select a wallpaper, and a reduced version of it displays on the monitor in the **Background** page. Figure 9.12 shows my favorite wallpaper.

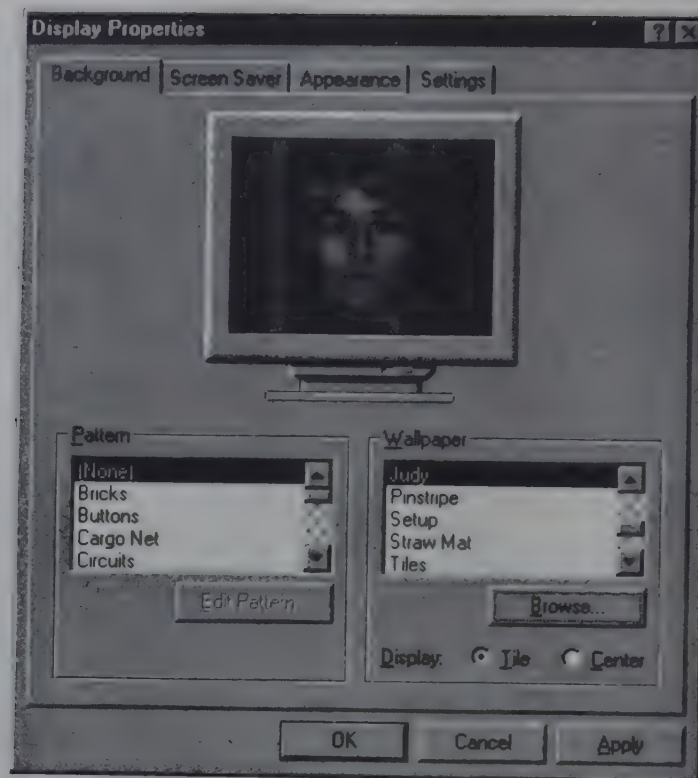


Figure 9.12 Selected wallpaper.

Click **Apply** to use the selected image as your wallpaper.

The **Tile** and **Center** radio buttons affect the wallpaper display. If the bitmapped image is small, choosing **Tile** generates many tiled copies of the image to fill the screen. Full-screen wallpaper images can be displayed with the **Center** option. You can change the look of your wallpaper by installing Desktop Themes in Microsoft Plus! (See Appendix A).

The Screen Saver Page

The **Screen Saver** page lets you select a screen saver pattern to run when your computer has been left unattended for a while. This process prevents the persistent display of an unchanging image to damage the screen's phosphor coating. Figure 9.13 is the **Screen Saver** page.

The drop-down list box presents a selection of screen saver patterns. As you select one, it displays in the dialog box's monitor image. To see what it looks like in full screen, click **Preview**.

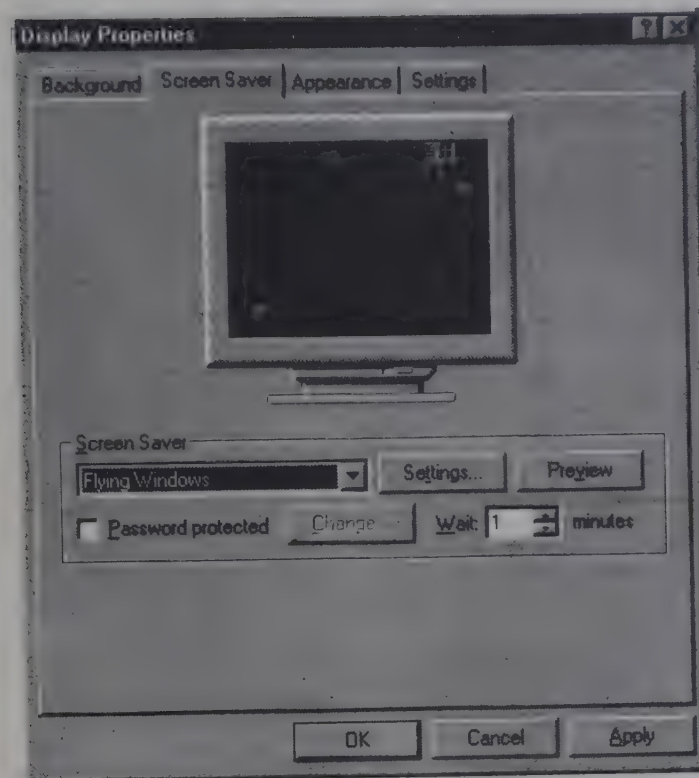


Figure 9.13 The Screen Saver page.

The **Wait** spin button lets you set an elapsed time. When there has been no keyboard or mouse activity in that period of time, the screen saver takes over the screen.

The **Password protected** checkbox lets you set a password for exiting from the screen saver and returning to the current application or the desktop. Turn on the checkbox and click **Change**. Figure 9.14 shows the Change Password dialog box.

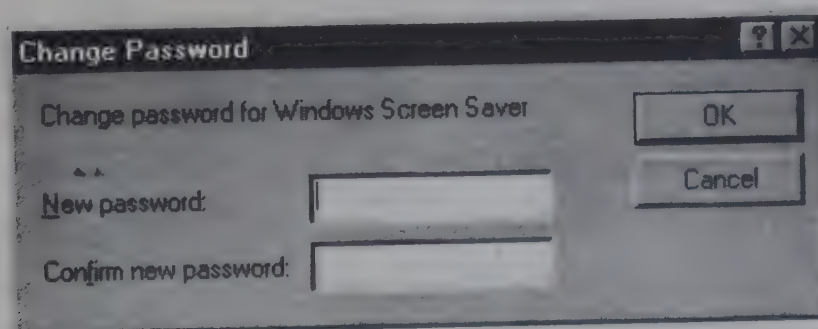


Figure 9.14 The Change Password dialog box.

Type your password into the **New password** control and press **Enter**. Type the same password into the **Confirm new password** control and press **Enter**. Remember your password.

If you forget your password, you must power down, restart Windows 95, open the Control Panel, open the Display Properties dialog box, and reset the password. That tells you how secure this password protection is, because anyone can do what I just described.

Computer stores often use this password feature to make you find a salesperson in order to test-drive a PC on display. Only the salespeople know the password, and, after they use the password to exit from the screen saver, they annoy you with their sales pitch while you are trying to concentrate on how the PC works. Don't bother with them. Use the power down procedure I just described.

The Appearance Page

The **Appearance** page in the Display Properties dialog box lets you change the color scheme of all the desktop and application components. Figure 9.15 shows the **Appearance** page.

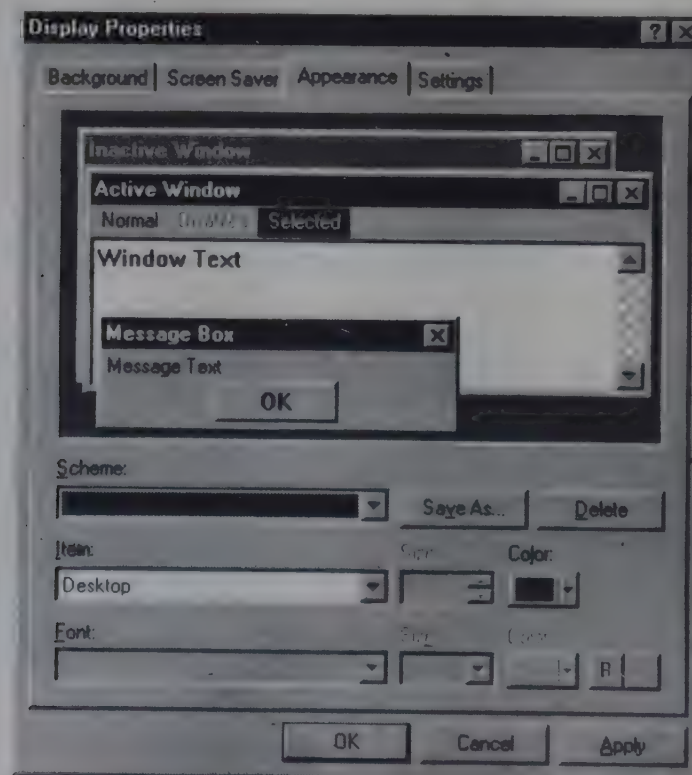


Figure 9.15 The Appearance page.

Each of the components in the sample desktop window on the **Appearance** page represents something that has its own color. You can select one of them by clicking it or by selecting its name from the **Item** drop-down list box. There are more items in the list than there are in the sample. With an item selected, you can change its color by selecting a color from the **Color** drop-down list box. Some items have a **Size** property that you can change. If an item is text, it might have a **Font** property. You can change its font in the **Font** drop-down list box. You can set the font size and color, too. The **B** and **I** buttons set boldface and italics properties.

The **Scheme** drop-down list box lists many color schemes from which you can select. As you select them, the sample display changes to show their appearance. You can use one of the standard schemes as a foundation to build a custom scheme by modifying some of the components and saving the scheme with the **Save As** command. Figure 9.16 shows the **Save Scheme** dialog box, which allows you to name the new scheme.

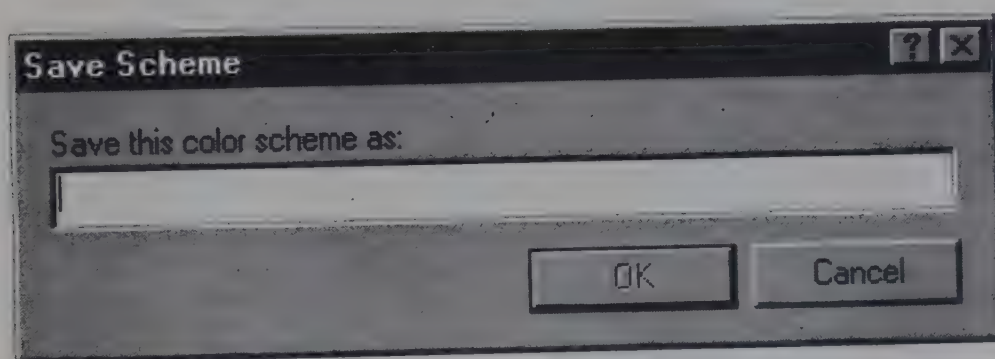


Figure 9.16 The Save Scheme dialog box.

Enter a scheme name and click **OK**. Your new scheme is added to the **Scheme** list in the Display Properties dialog box.

The Settings Page

The **Settings** page in the Display Properties dialog box allows you to change the hardware characteristics of the display. Figure 9.17 is the **Settings** page.

There are limits to what you can do with the **Settings** page, and these limits are defined by the display adapter installed in your PC and the video monitor. Windows 95 can usually tell which display adapter is installed, but it has no way of knowing what kind of monitor you are using. Click **Change Display Type** to view the Change Display Type dialog box shown in Figure 9.18.

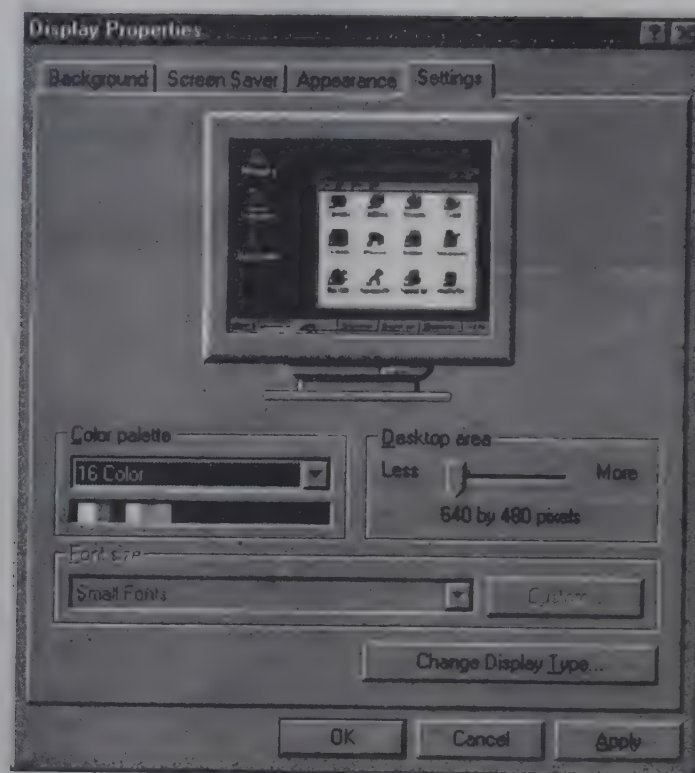


Figure 9.17 The Settings page.

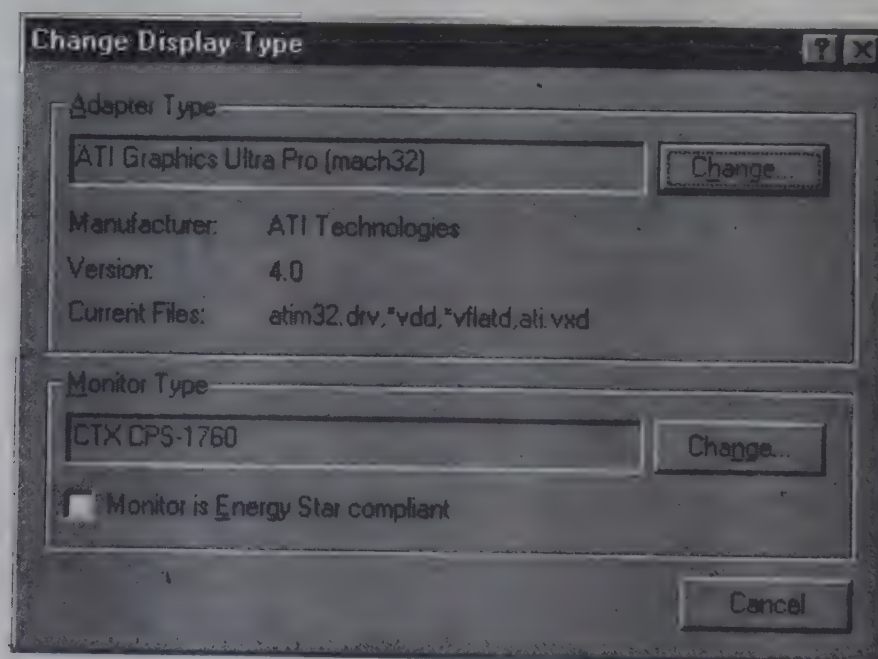


Figure 9.18 The Change Display Type dialog box.

If the display adapter listed under **Adapter Type** is not what you have in your PC (chances are good, however, that the value is correct), you can configure another device by clicking **Change**. Figure 9.19 shows the Select Device dialog box.

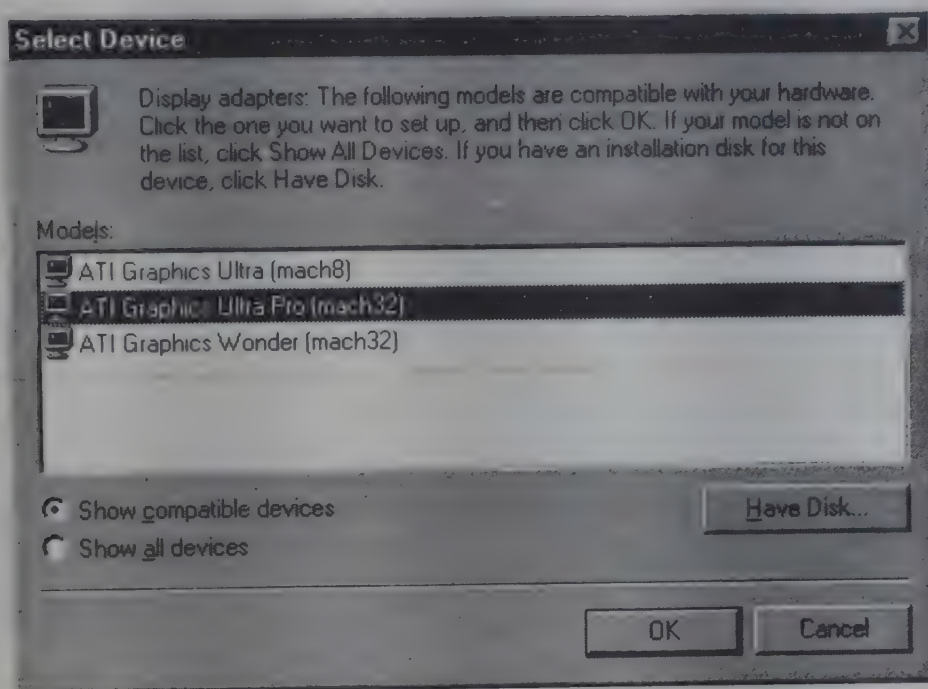


Figure 9.19 Select Device dialog box.

The devices listed in the **Models** list are ones that Windows 95 detects as being compatible with the hardware it detected. If you still think it is wrong, click **Show all devices**. The dialog box changes, as shown in Figure 9.20.

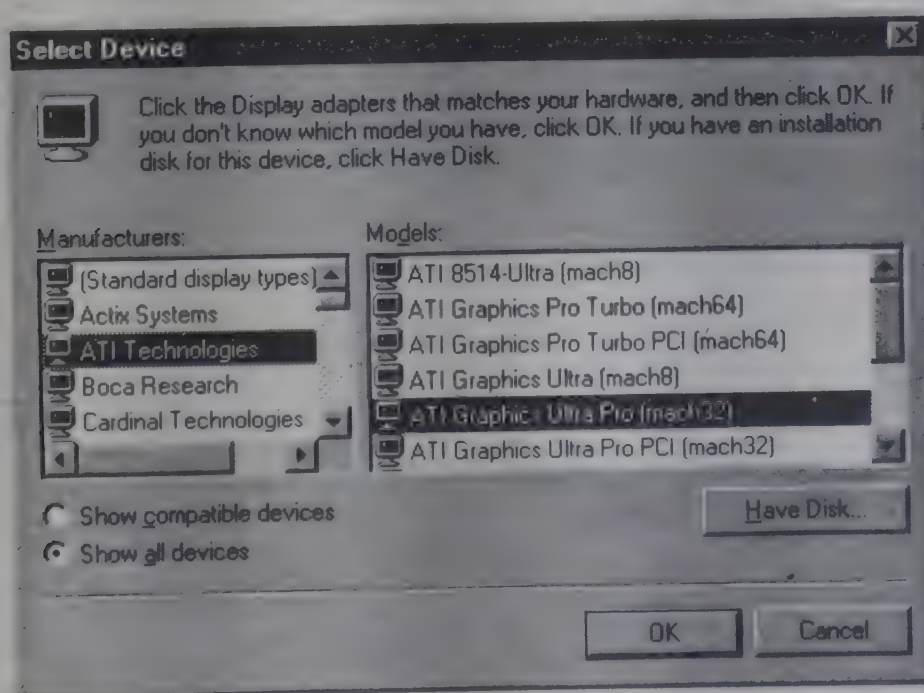


Figure 9.20 Select Device showing all devices.

Select the manufacturer of your display adapter from the **Manufacturers** list. Select the model from the **Models** list. If one or the other is not in the list and a disk with Windows 95 drivers came with the hardware, click **Have disk** to open the Install From Disk dialog box shown in Figure 9.21.

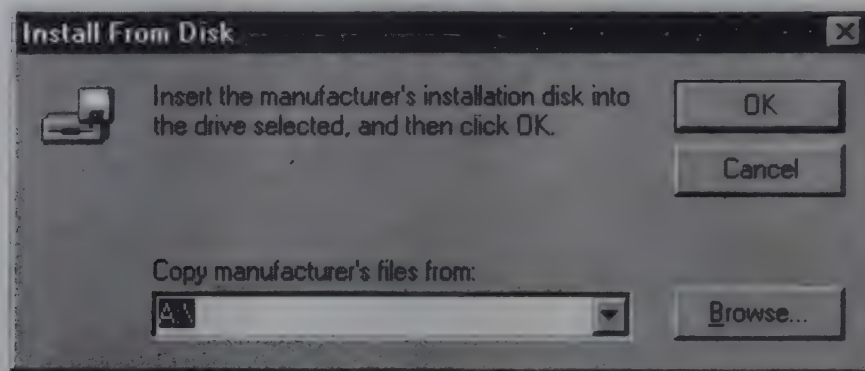


Figure 9.21 The Install From Disk dialog box.

Insert the driver disk and click **OK** to install the display adapter into Windows 95. Make sure that you use the most recent version of the driver, whether that file is part of the Windows 95 driver set or supplied to you from the manufacturer.

You can also check out the Windows 95 Driver Library on the Microsoft Web site (<http://www.microsoft.com>) to find a driver you are looking for. Access the Web site and click **Free Downloads**; then follow the instructions on the screen.

Refer again to Figure 9.18. Having described your display adapter to Windows 95, you can now specify the monitor by clicking the **Change** button next to the **Monitor Type** control. The procedure for specifying a monitor is exactly the same as that for specifying a display adapter.

Refer again to Figure 9.17. The **Color palette** drop-down list box lists three choices: **16 Color**, **256 Color**, and **High Color (16 bit)**. The Desktop area slide switch slides to the right and left when you drag it with the mouse to indicate the screen resolution. The values are **640 by 480**, **800 by 600**, **1024 by 768**,

and 1280 by 1024. Not all display adapters and monitors can support all these color modes and resolutions, and Windows 95 will tell you if you have selected a combination that the installed hardware cannot support.

When you have specified a resolution of 800 by 600 or greater, the **Font Size** drop-down list box lets you select between large and small fonts for the text on the desktop and in window titles, button labels, and so on. You can also specify a custom font size by clicking the **Custom** button to open the Custom Font Size dialog box shown in Figure 9.22.

You can select a value from the drop-down list box, type a percentage value into the text box, or drag the ruler back and forth with the mouse to create a custom font size. As you make changes, the sample text below the ruler changes its values and size to indicate the effect of each change. Click **OK** when the font size is the way you want it.

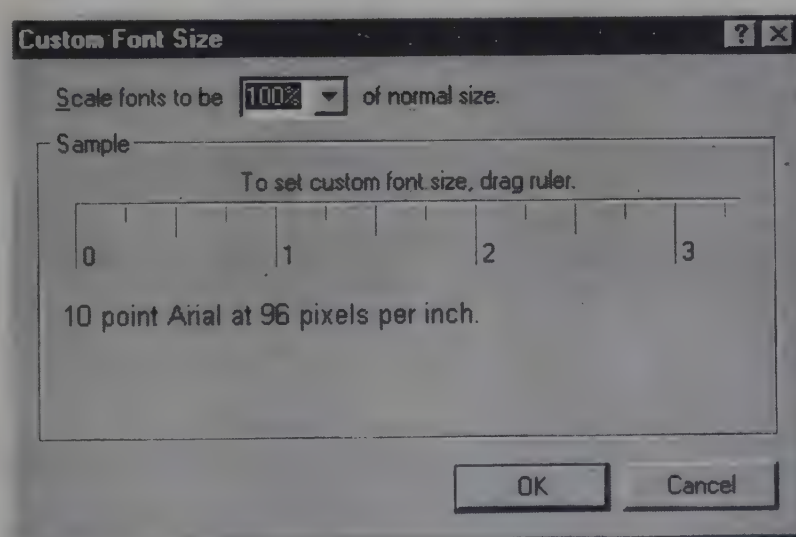


Figure 9.22 The Custom Font Size dialog box.

Keyboard

Click the **Keyboard** icon on the Control Panel to open the Keyboard Properties dialog box in Figure 9.23.

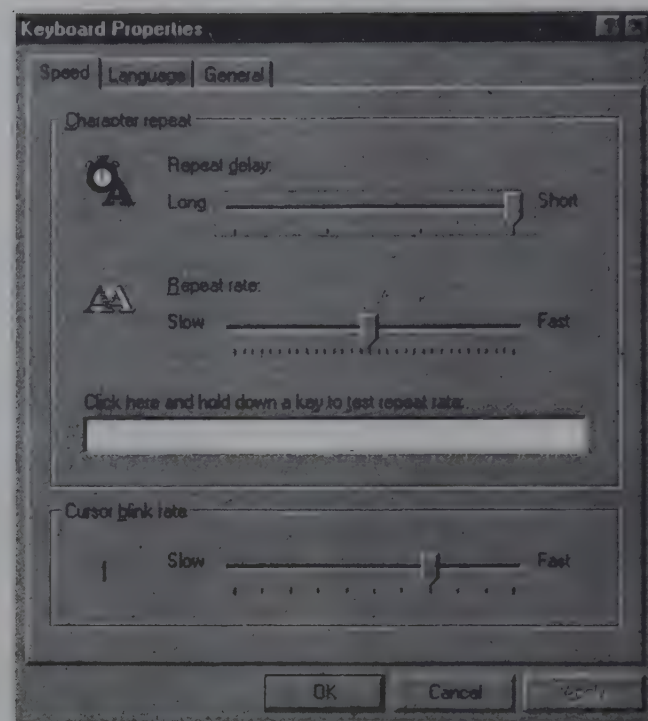


Figure 9.23 The Keyboard Properties dialog box.

There are three pages in the Keyboard Properties dialog box: **Speed**, **Language**, and **General**.

The Speed Page

The **Speed** page in the Keyboard Properties dialog box lets you set the keyboard speed—often called the *typematic* rate—and the cursor blink rate. You adjust these rates by changing their slide switches. The repeat delay is the length of time after you first press a key before the key starts repeating if you do not release it. The repeat rate is the speed at which the key repeats. The text box under the repeat slide switches lets you test the rates you've selected.

The cursor blink rate is the speed that the cursor blinks. The **Speed** page has a sample cursor that blinks at whatever rate you've selected.

The Language Page

Different keyboard layouts are used in different parts of the world. The Language page in the Keyboard Properties dialog box, shown in Figure 9.24, lets you install keyboard support for multiple languages.

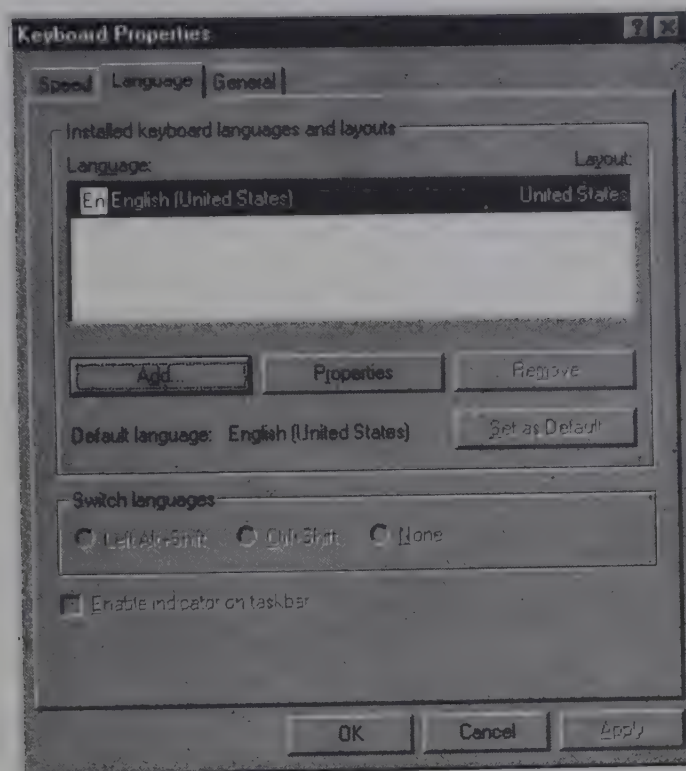


Figure 9.24 The Language page.

The **Language** list shows the currently installed languages. You can add languages using the **Add** button, which opens the Add Language dialog box shown in Figure 9.25.

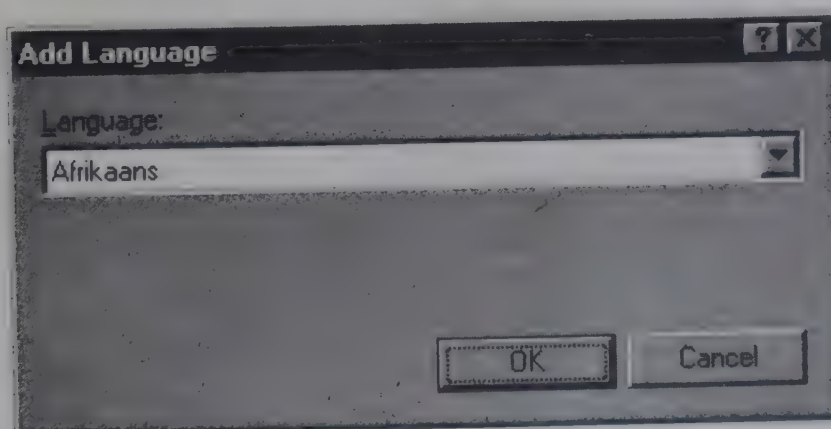


Figure 9.25 The Add Language dialog box.

Select a language from the **Language** list and click **OK**. The language is added to the **Language** page as shown in Figure 9.26.

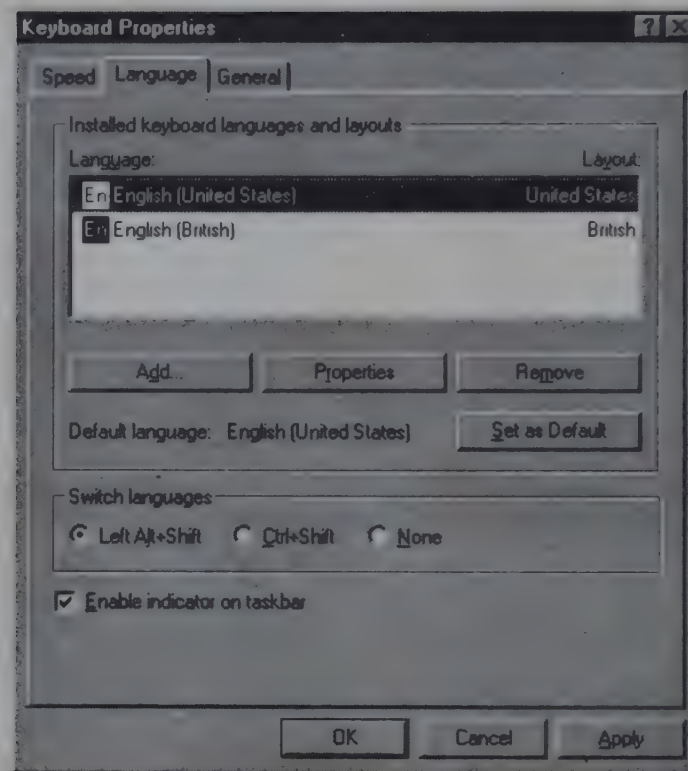


Figure 9.26 A language added.

You can set the selected language as the default using **Set as Default**. The **Remove** button removes the selected language. The **Properties** button opens the Language Properties dialog box shown in Figure 9.27.

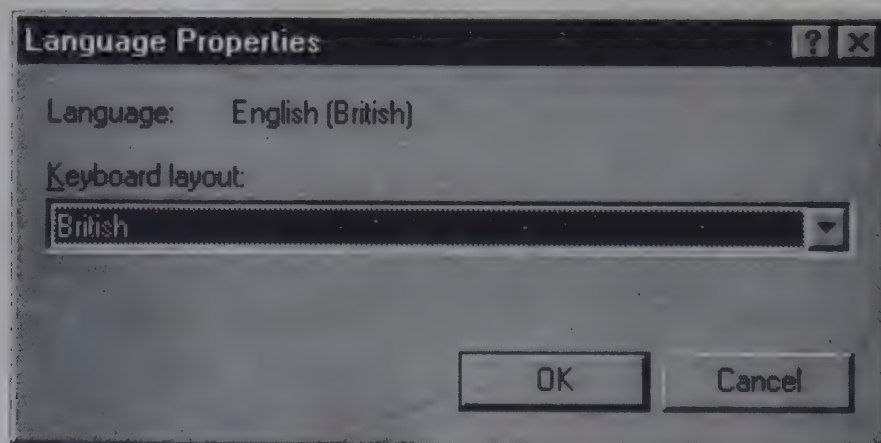


Figure 9.27 The Language Properties dialog box.

You can select a keyboard layout for the language from the drop-down list box.

The **Switch languages** radio buttons on the **Language** page allow you to choose a keystroke that switches languages on the fly. If you check the **Enable indicator on taskbar** checkbox, a small text indicator displays next to the time of day display at the right end of the Taskbar. Clicking that indicator opens a small menu that allows you to change the current language.

Realize that changing the language changes only the way the keyboard responds to certain keystrokes. Don't expect automatic translation when you type.

The General Page

The **General** page in the Keyboard Properties dialog box changes the kind of keyboard that Windows 95 has installed. You would use this feature if you physically change keyboards. Figure 9.28 shows the **General** page.

To change the keyboard type, click the **Change** button. Figure 9.29 shows the Select Device dialog box.

Select a keyboard device and click **OK**. If you have a disk with Windows 95 drivers for your keyboard, click **Have Disk** and follow the procedure used earlier in this chapter to install display adapter drivers from a disk.

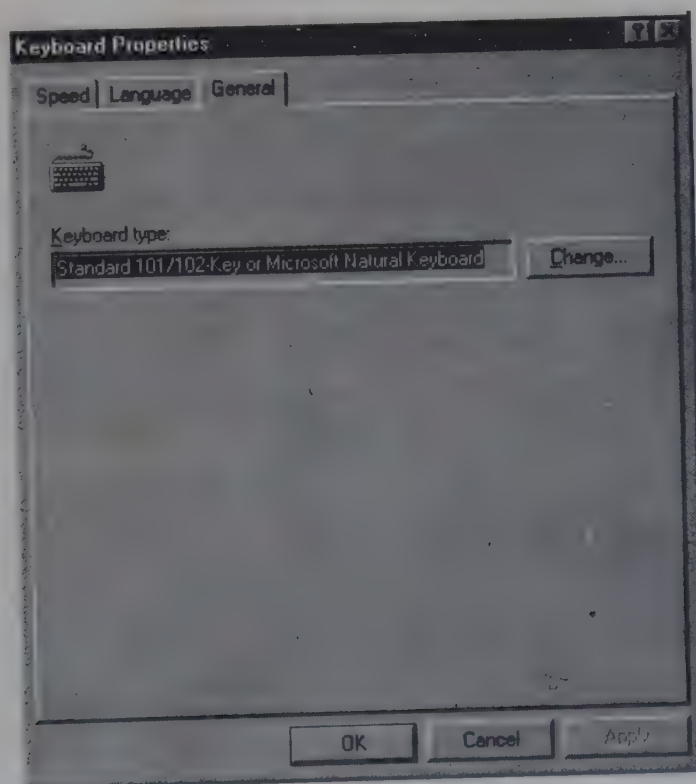


Figure 9.28 The General page.

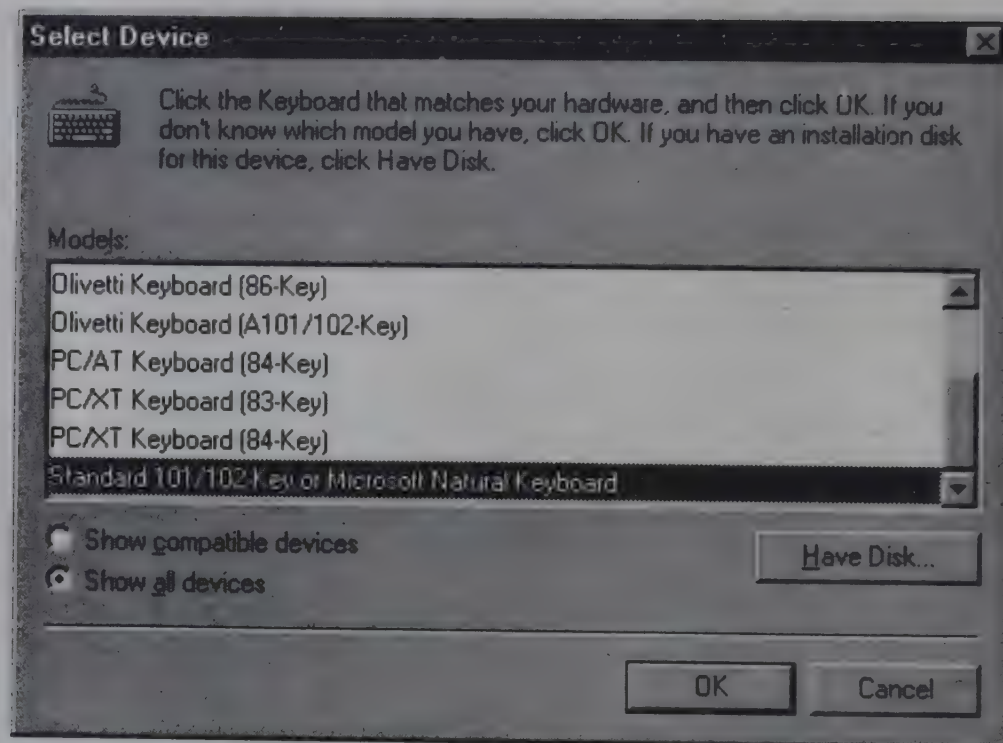


Figure 9.29 The Select Device dialog box.

Joystick

Not many Windows applications use the joystick. It's a device reserved mainly for games, and, until recently, few action games were written to run under Windows. Now, with the introduction into the mainstream of faster hardware and better support for games developers, Windows games proliferate. The company has, therefore, included device-independent support for the joystick in Windows 95. To specify and calibrate your joystick, double-click the **Joystick** icon in the Control Panel. You will see the Joystick Properties dialog box shown in Figure 9.30.

PCs can have multiple joysticks. Select one to be current from the **Current joystick** drop-down list box. Then select a particular joystick device from the **Joystick selection** drop-down list box. Click **Calibrate** to view the Joystick Calibration dialog box shown in Figure 9.31.

Follow the instructions in the dialog box to calibrate the joystick. The instructions involve three steps (more for some joysticks), and the dialog box tells you what to do. When the tests are finished, the **Next** button changes to a **Finish** button and a **Test** button appears on the left side of the **Back** button.

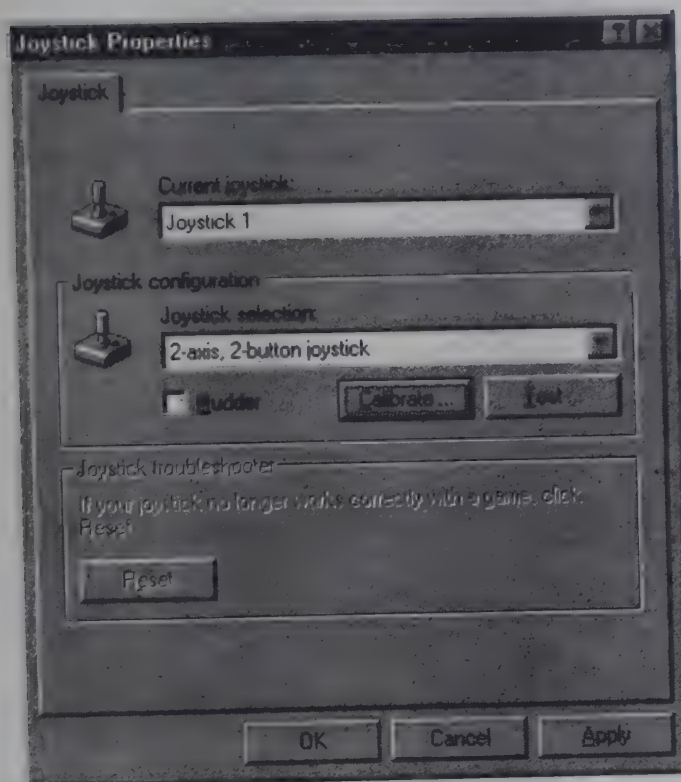


Figure 9.30 The Joystick Properties dialog box.

Test the joystick by clicking **Test**, which opens the Joystick Test dialog box shown in Figure 9.32.

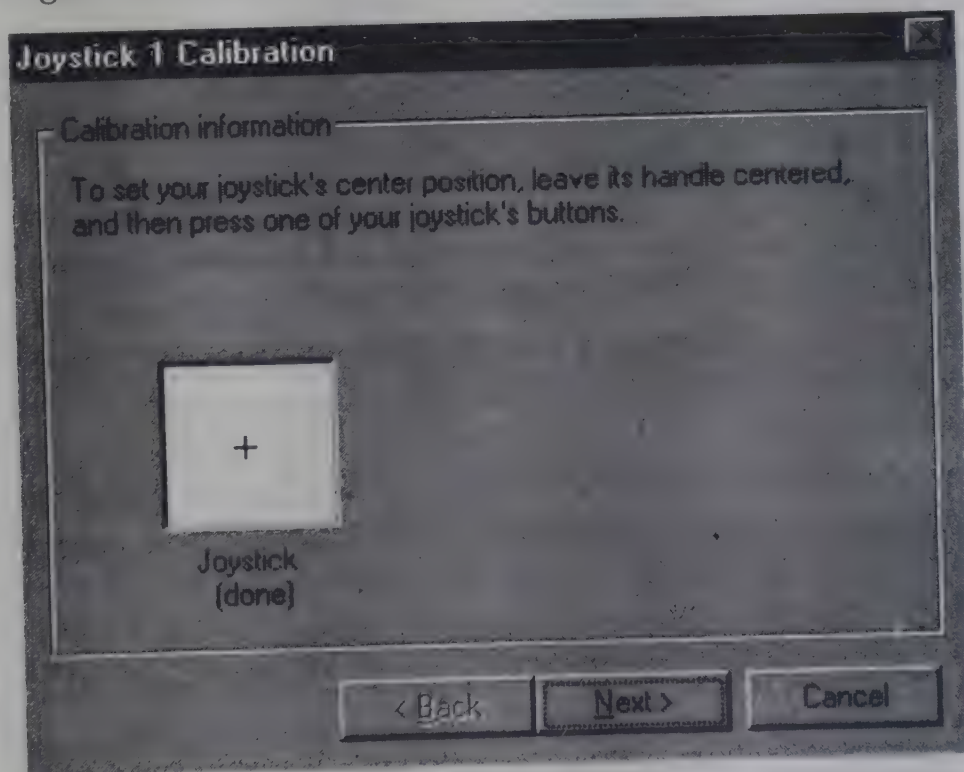


Figure 9.31 The Joystick Calibration dialog box.

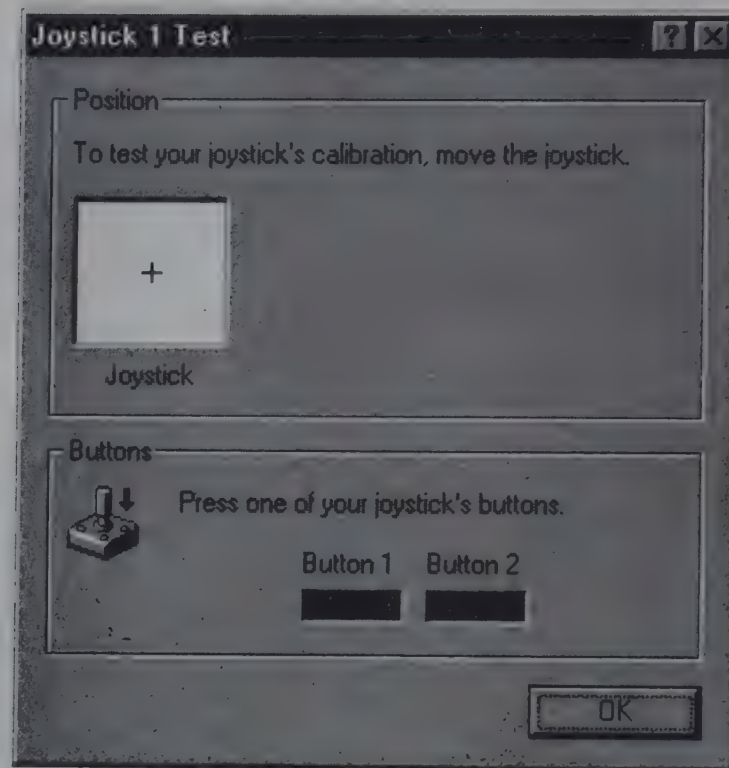


Figure 9.32 The Joystick Test dialog box.

Follow the instructions on the dialog box to test the joystick. Click **OK** when you are finished.

Modems

A modem is a device connected to one of the PC's serial ports that you use to connect your PC to other computers via commercial telephone lines. Those other computers might be on-line services such as The Microsoft Network and America Online, bulletin board systems, a dialup server on a network at your job, an Internet provider, or a colleague's PC. In all cases, you use a modem to call the other computer, which uses a modem to answer the call. The modems modulate the computer's data signals into tones at the source and demodulate the tones into computer data signals at the destination. Computers connected by modems carry on two-way conversations; both ends of the connection can send and receive data. To use a modem, you must have communications

software. Windows 95 includes communications software that lets you make all the kinds of connections just listed.

If you had a modem plugged into the PC and turned on when you set up Windows 95, the modem was probably installed properly. If the modem was not installed or not turned on during setup, you need to use the Control Panel to install the modem. Without a properly installed modem you cannot use many of the dialup features of Windows 95.

Double-click the **Modems** icon in the Control Panel to open the Modems Properties dialog box shown in Figure 9.33.

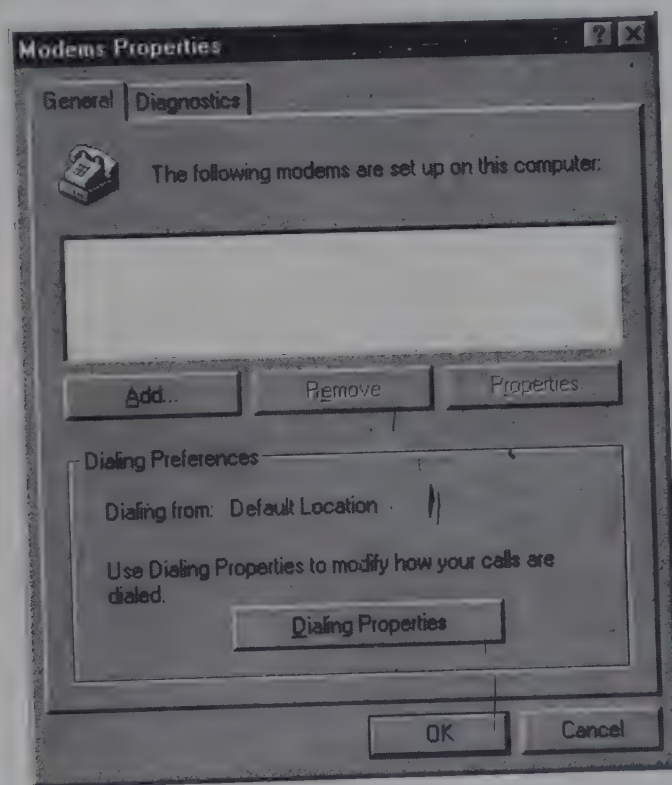


Figure 9.33 The Modems Properties dialog box.

Click the **Add** button to open the Install New Modem wizard shown in Figure 9.34.

Click **Next** to let the wizard sense and install your modem. The wizard tests your communications ports and tries to detect a modem. When the wizard detects a modem, the wizard displays the Verify Modem dialog shown in Figure 9.35.

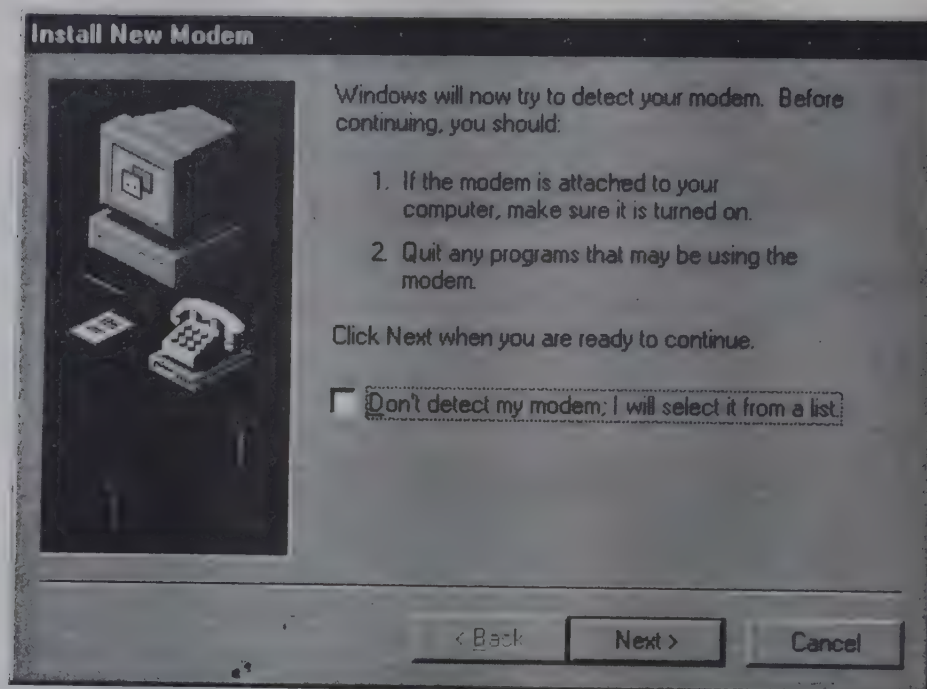


Figure 9.34 The Install New Modem wizard.

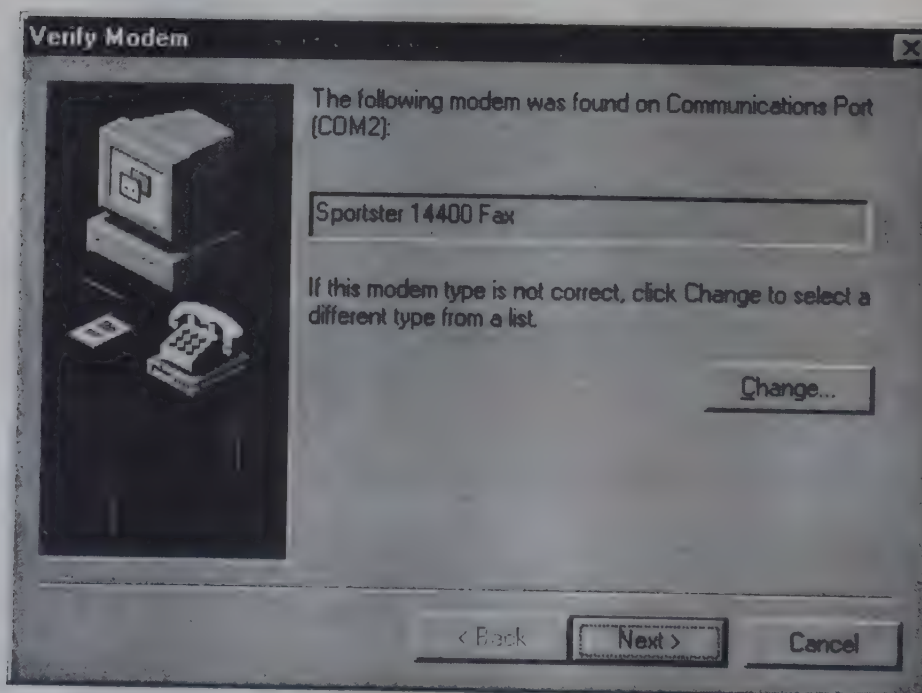


Figure 9.35 The Verify Modem dialog box.

Click **Next**. The wizard thinks for a while and then displays a dialog to say that it is finished. Click **Finish**. The Modems Properties dialog box displays with the modem installed as shown in Figure 9.36.

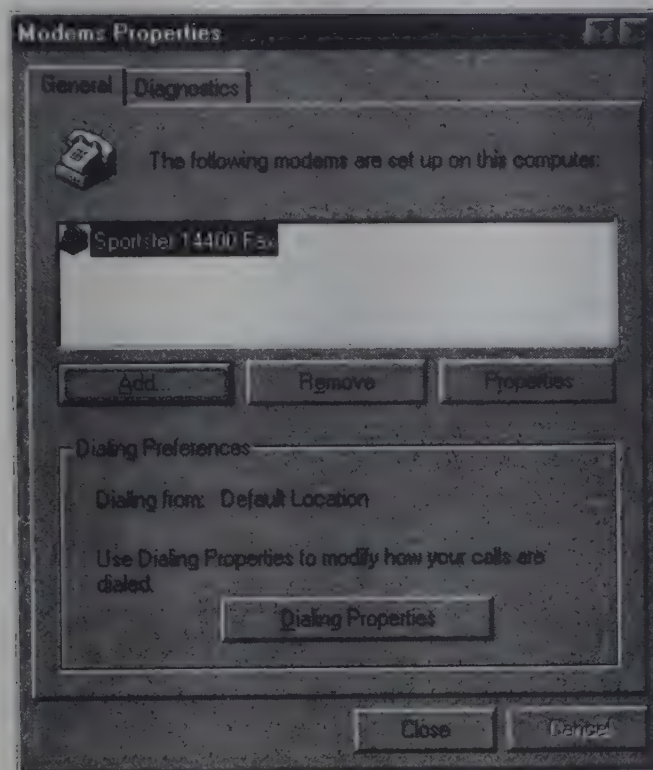


Figure 9.36 The Modems Properties dialog box.

You can usually leave the modem's properties alone, but if you are curious or need to change them, click **Properties** to display the properties dialog box specific to your modem. Figure 9.37 shows the properties box for my modem.

In case, for some reason, you unplug the modem from its original communications port and move it to another one, the **General** page lets you change the port assignment. You can set the volume of the modem speaker and program the modem's maximum speed. The only time you change the maximum speed is when you are in a remote area where the phone lines are of such poor quality that you cannot get a good connection at the full speed of the hardware.

The **Connection** page of the modem's properties dialog is shown in Figure 9.38.

You can change the data bits, parity, and stop bits if you know what those things are and you know that you need to change them. The local and remote modems need to use the same settings for these variables. Most communications programs include profiles for each of the services that you call. The communications programs change these variables to match the profiles, so you seldom if ever need to use this dialog box to change them yourself.

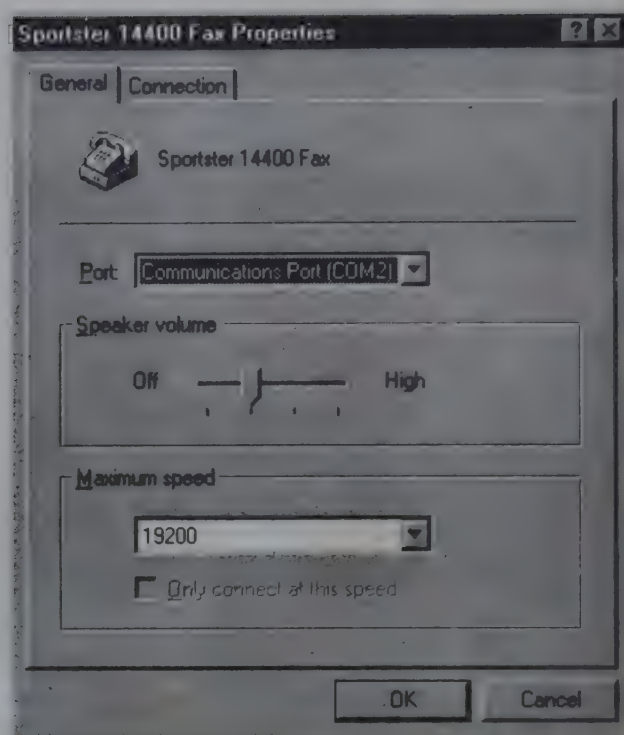


Figure 9.37 A specific modem properties dialog box.

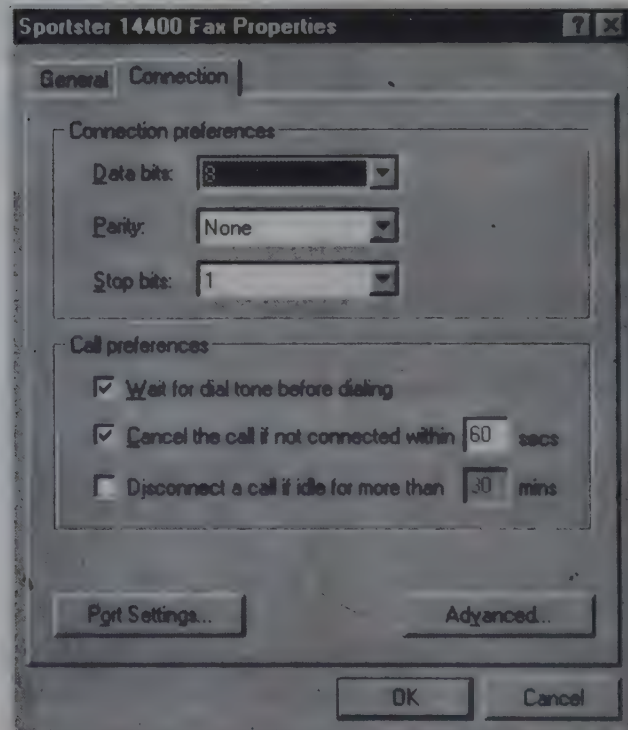


Figure 9.38 Connection page.

The **Call preferences** checkboxes are set to typical values. Change the first one if you want to start dialing without a dial tone, although I'm not sure why you would want to do that.

The **Port Settings** button opens the Advanced Port Settings dialog box shown in Figure 9.39.

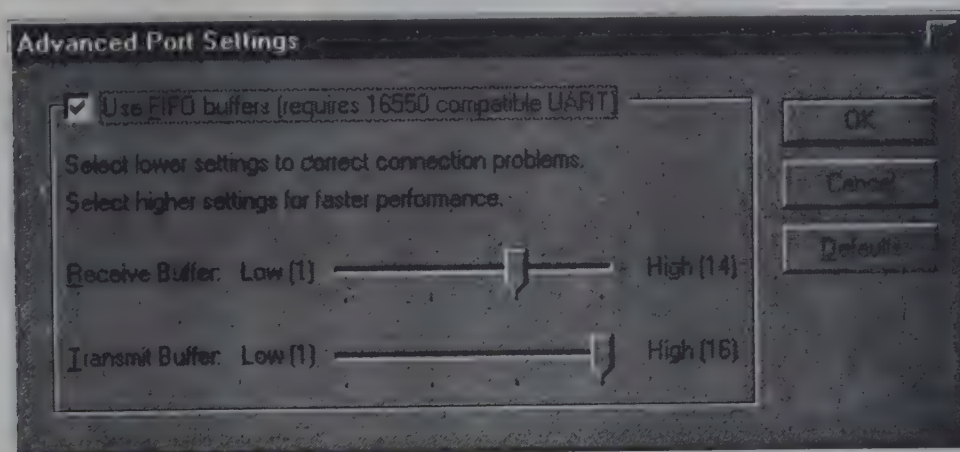


Figure 9.39 The Advanced Port Settings dialog box.

You can tweak these values to affect the performance of the modem.

The **Advanced** button on the **Connection** page opens the Advanced Connection Settings dialog box shown in Figure 9.40.

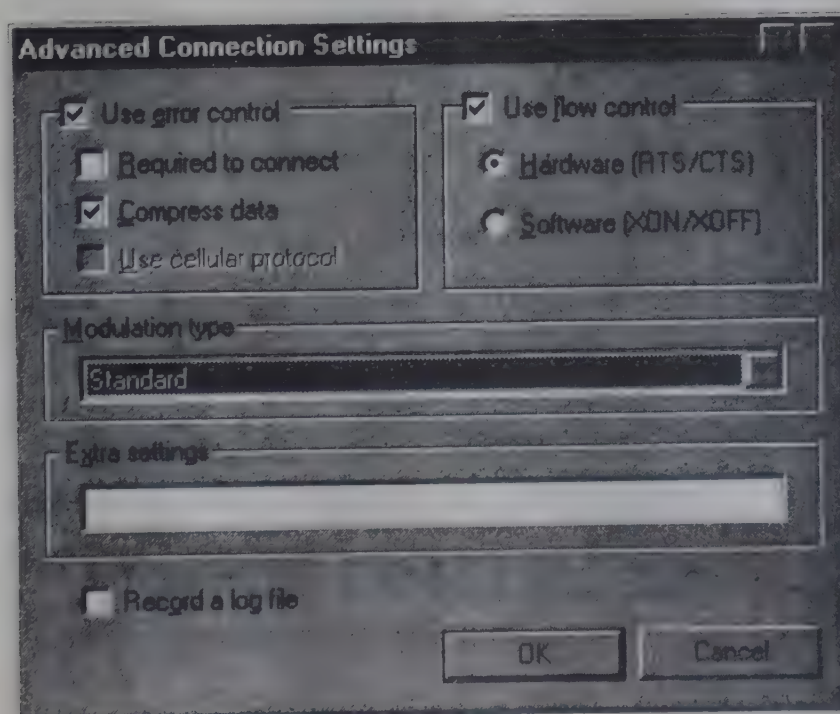


Figure 9.40 Advanced Connection Settings dialog box.

The **Use error control** checkbox tells your modem to use hardware error checking. If **Required to connect** is checked, the connection is completed only if hardware error checking is successful. The **Compress data** checkbox compresses data being transmitted if the receiving modem can decompress data and decompresses data being received if the sending modem compresses data.

Flow control means that the receiver tells the sender when the receiver is able to receive. **Hardware** flow control uses a status signal to halt and enable receptions. The receiver asserts these signals to control the flow. **Software** flow control uses XOFF and XON data bytes for the same purpose. The receiver sends these data bytes to control the flow.

The **Dialing Properties** button in the Modems Properties dialog box opens the Dialing Properties dialog box shown in Figure 9.41.

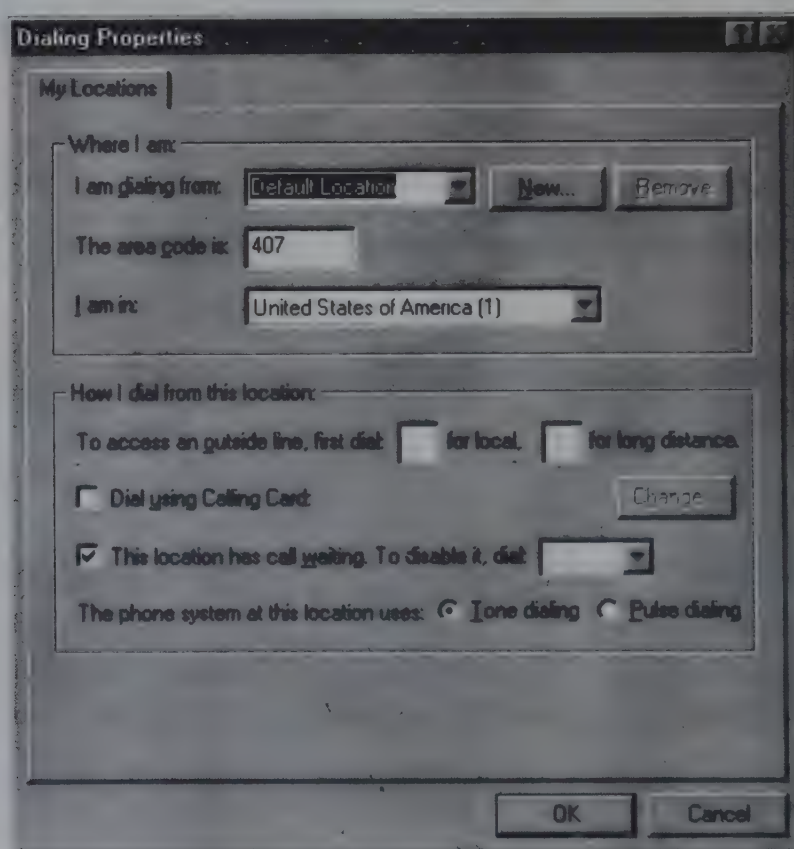


Figure 9.41 The Dialing Properties dialog box.

Use this dialog box to specify where you are located and how to make a long distance call. If you click **Dial using Calling Card**, the Change Calling Card dialog box in Figure 9.42 opens.

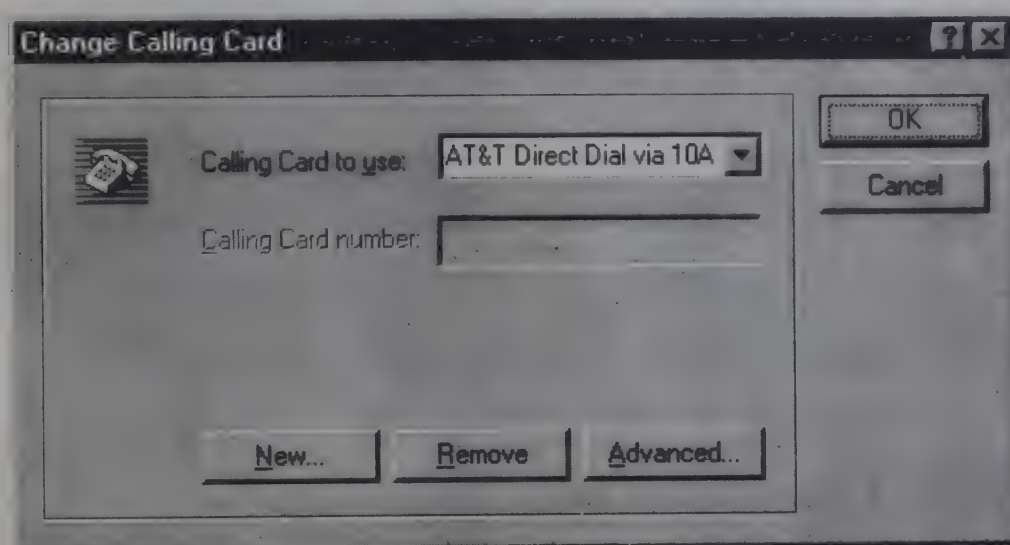


Figure 9.42 Change Calling Card dialog box.

Select a calling card from the drop-down list box. If the card you select accepts a card number, enter the number into the **Calling Card number** text box. The **Advanced** button opens a Dialing Rules dialog box, which contains values that you cannot change. The **Remove** button removes a calling card entry from the list. If you use more than one service, you can enter calling card numbers for each of them.

Mouse

If you don't have a mouse, you shouldn't be running Windows 95. It is possible but tedious. To install or configure your mouse, double-click the **Mouse** icon on the Control Panel. This action opens the Mouse Properties dialog box shown in Figure 9.43.

The Mouse Properties dialog box has four pages: the **Buttons** page, the **Pointers** page, the **Motion** page, and the **General** page.

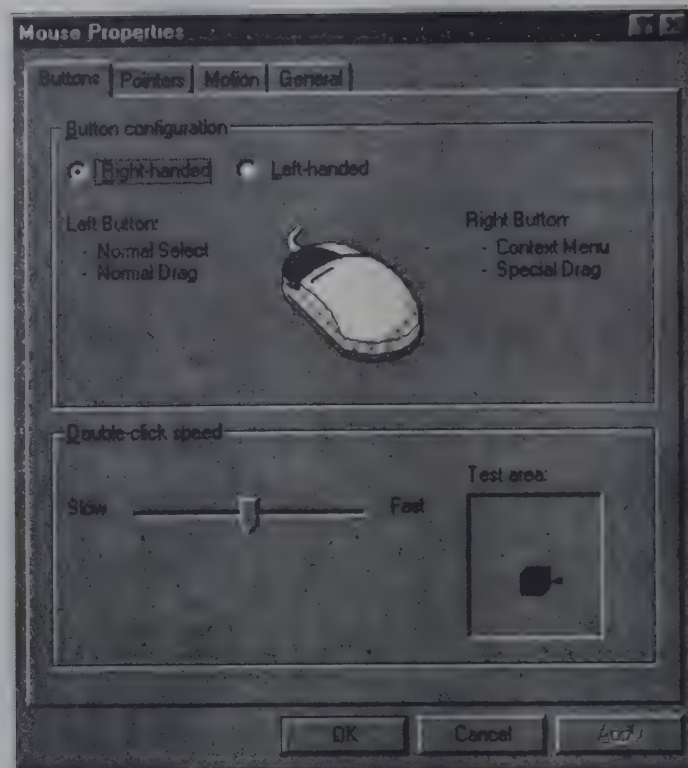


Figure 9.43 The Buttons page.

The Buttons Page

The **Buttons** page lets you assign select, drag, and context menu operations to the right and left mouse buttons. This feature supports people who are left-handed or who simply prefer things the other way.

The slide switch changes the speed of a double-click—the time between clicks that the system uses to distinguish between a double-click and two single clicks. After you change the speed, you can test it before accepting it by double-clicking in the test area to pop up the jack-in-the-box.

The Pointers Page

Figure 9.44 shows the **Pointers** page in the Mouse Properties dialog box.

You might not have selected the option to install other mouse pointer objects when you ran setup. You can return to the **Add/Remove Programs** icon on the Control Panel if you want to install mouse pointers other than the default ones.

The list shows the Windows 95 conditions that use their own mouse pointers. You can change one by selecting it and then clicking the **Browse** button to open the Browse dialog box shown in Figure 9.45.

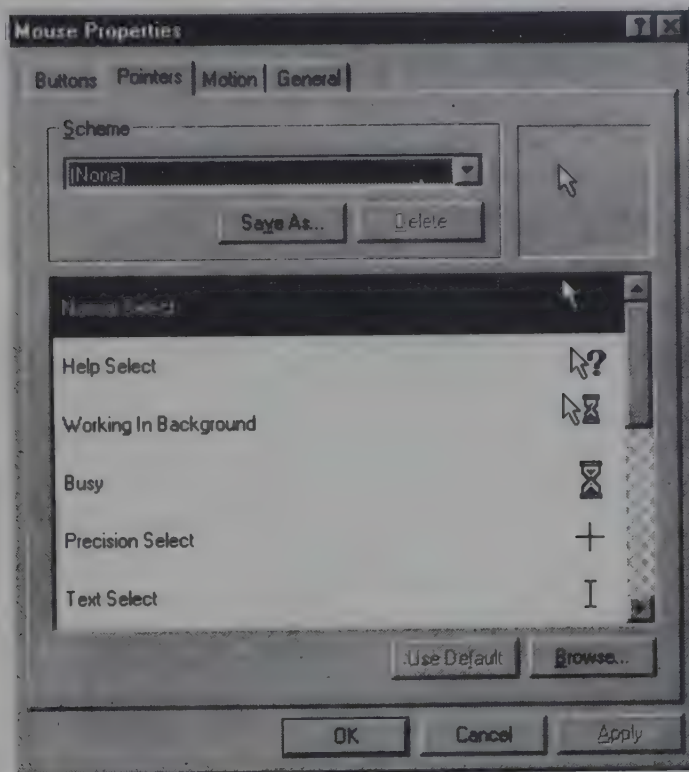


Figure 9.44 The Pointers page.

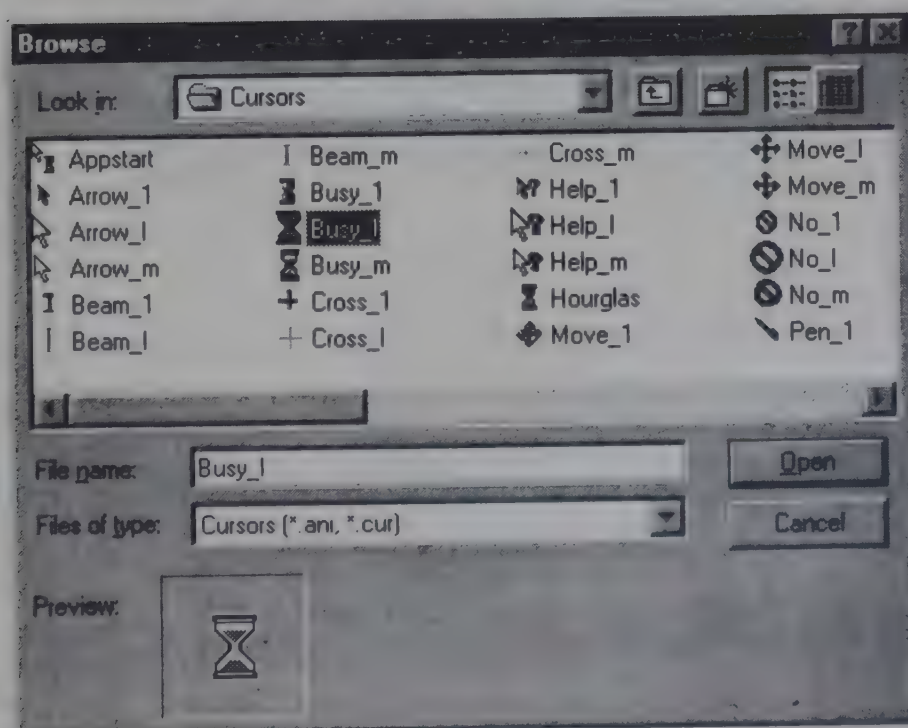


Figure 9.45 Browsing for mouse pointers.

Select a new mouse pointer from the list and click **Open** to assign the cursor to the selected Windows 95 function.

The Motion Page

Figure 9.46 shows the **Motion** page.

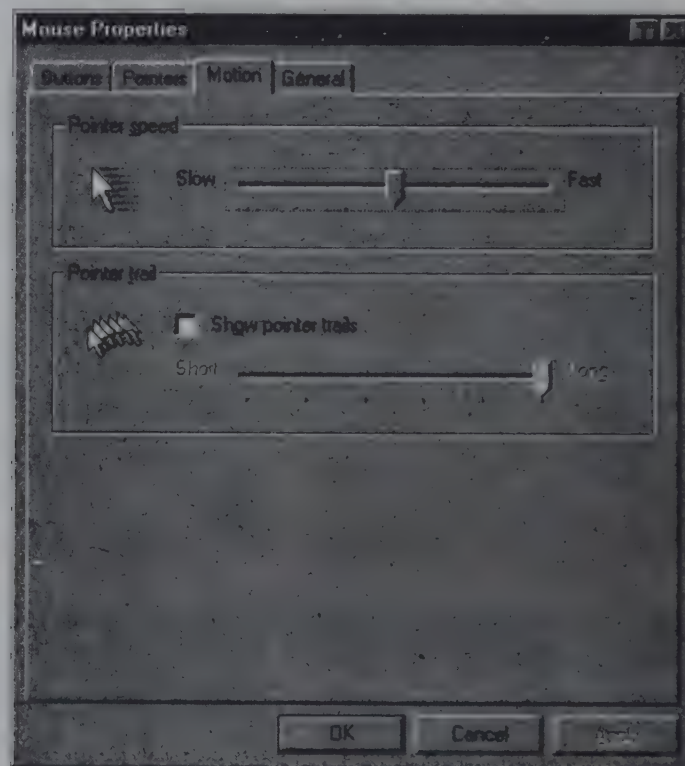


Figure 9.46 The Motion page.

Change the mouse pointer's speed by dragging the **Pointer speed** slide switch. Click the **Show pointer trails** checkbox to add pointer trails. Some laptop displays, particularly monochrome ones, tend to obscure the position of the mouse pointer because the refresh rates and LCD persistence factors cannot keep up with the mouse speed. If this is the case on your system, selecting the **Show pointer trails** checkbox will help you see the mouse pointer as you move it across the screen.

The General Page

The **General** page identifies the installed mouse and lets you change to a different mouse device. Click its **Change** button to open a Select Device dialog box similar to the one you used in Figure 9.19.

FONTS

Windows 95 has a number of fonts installed. When you run an application, such as WordPad, that displays and prints text in selected fonts, the application selects its fonts from those installed in Windows 95.

Installed fonts consume system resources. To delete the ones you don't need and install others that you get from other sources, click the **Fonts** icon on the Control Panel. Figure 9.47 shows the Fonts application.

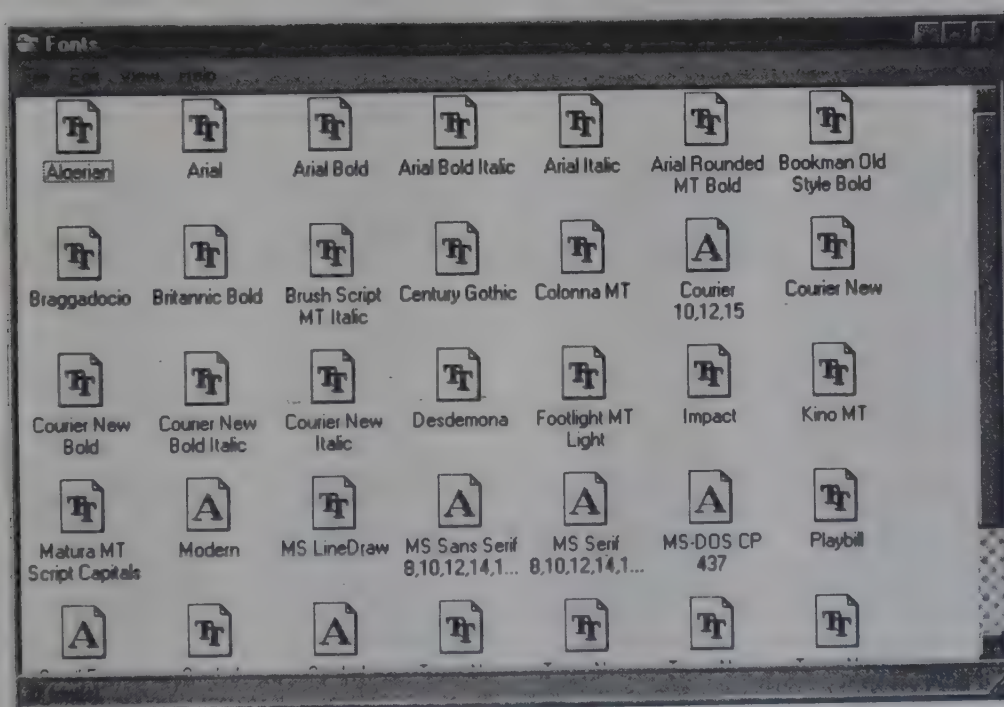


Figure 9.47 The Fonts application.

The File menu has commands for viewing, installing, and deleting fonts.

Now Windows 95 can work with HP LaserJet 4 grayscale fonts. You can download the software that lets Windows take advantage of the HP fonts from Microsoft's Web site (<http://www.microsoft.com>).

Viewing a Font

To view an installed font, select its icon in the application window and choose **Open** on the File menu. You will see the dialog box shown in Figure 9.48.

Click **Print** to print the font sample. Click **Done** to close the dialog box.

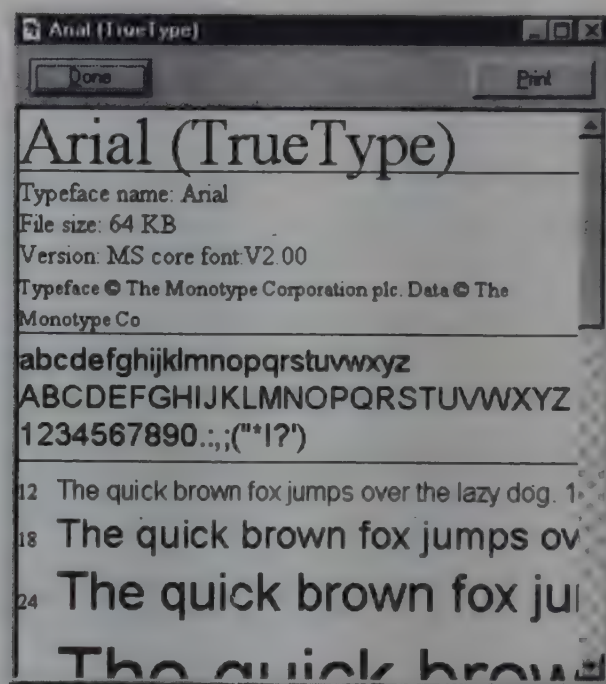


Figure 9.48 Viewing a font.

Installing a Font

To install a font, choose the **Install New Font** command on the File menu. You will see the Add Fonts dialog box shown in Figure 9.49.

To find some fonts to install, you must navigate the **Drives** and **Folders**. Windows 95 keeps its fonts in the WINDOWS\FONTS subdirectory. Select that subdirectory in the **Folders** list box to view the fonts, as shown in Figure 9.50.

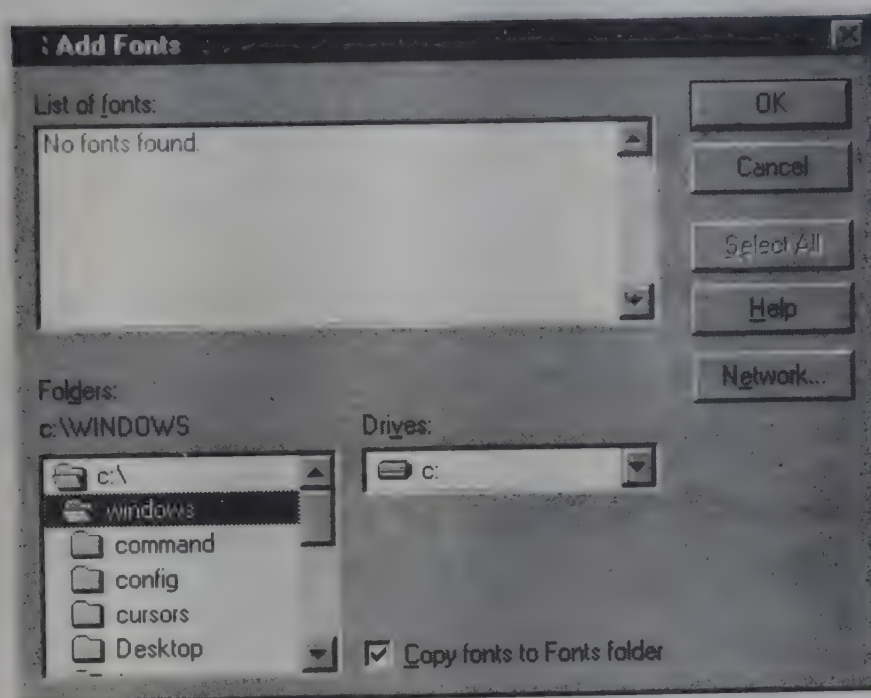


Figure 9.49 Add Fonts dialog box.

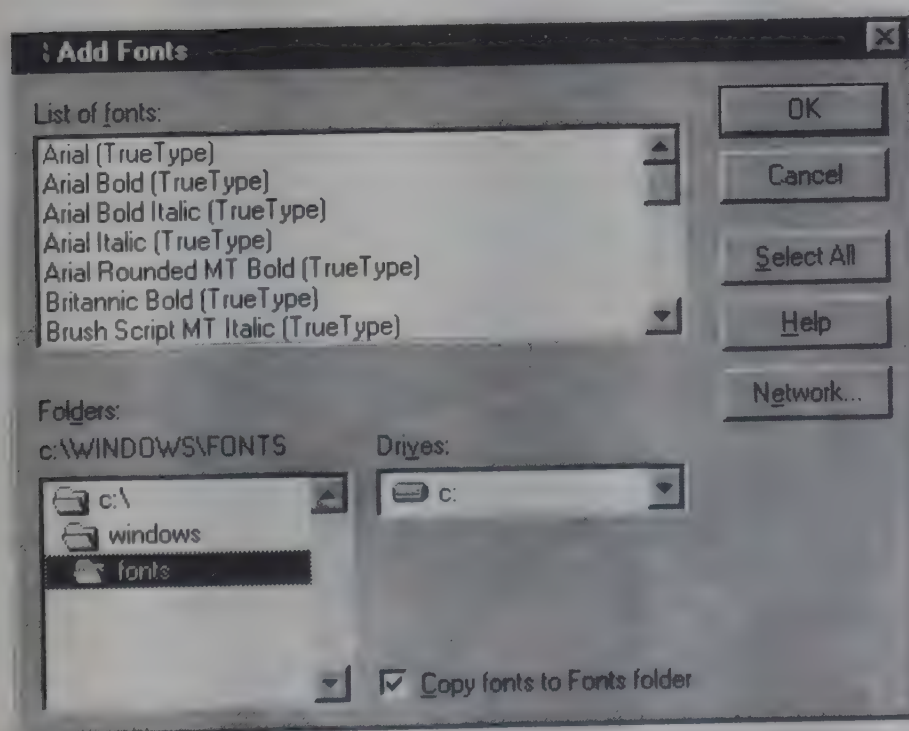


Figure 9.50 Add Fonts dialog box.

Select a font from the list and click **OK** to install the font.

Deleting a Font

To delete a font, select the font's icon in the Fonts application window and choose the **Delete** command on the File menu.

SOUNDS

If you have a sound card installed, Windows 95 can assign sound effects to critical system events. Chapter 13 discusses the multimedia aspects of sound cards and how to install them. Double-click the **Sounds** icon on the Control Panel to open the Sounds Properties dialog box shown in Figure 9.51.

To assign a sound to an event, first select an event from the **Events** list box. Then select a sound from the **Name** list box. Figure 9.52 shows an event and a sound selected.

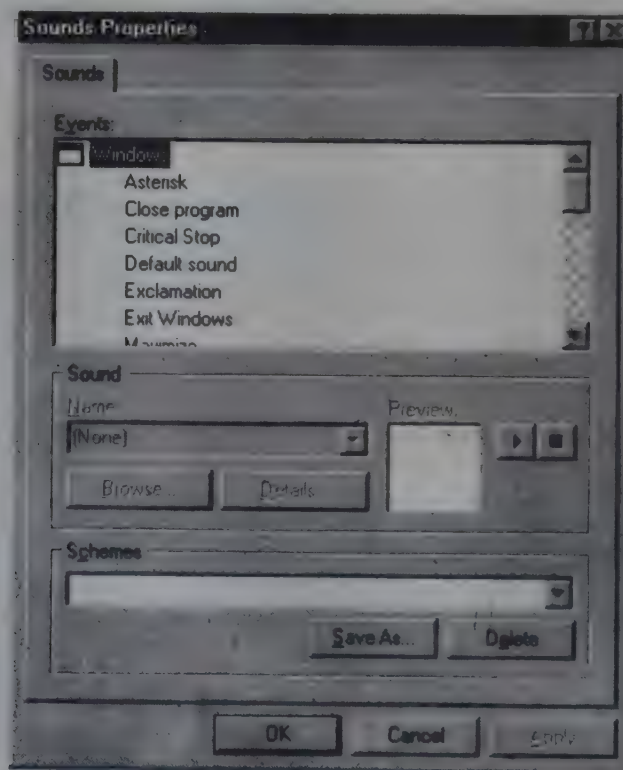


Figure 9.51 Sounds Properties dialog box.

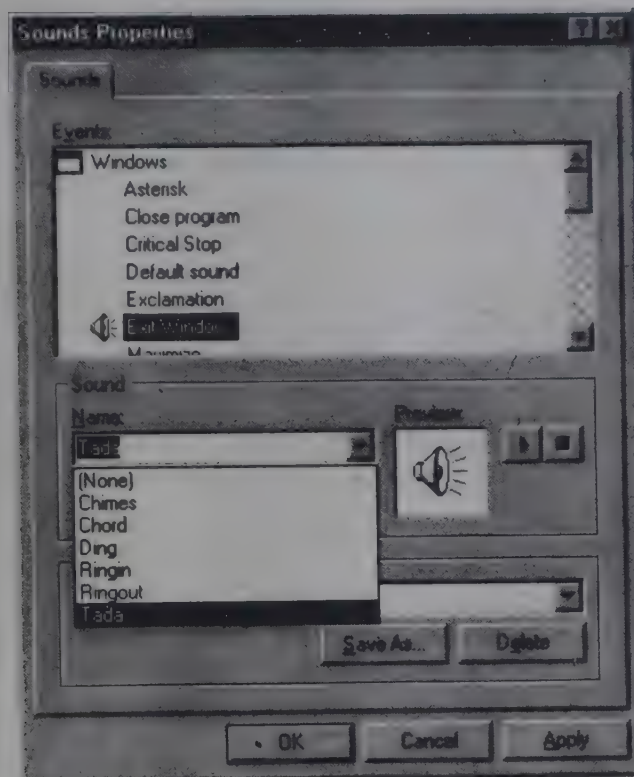


Figure 9.52 Event and sound selected.

Click the right-pointing arrow button next to the **Preview** display to hear the sound.

You can record schemes of sound-to-event assignments, save them with the **Save As** command, and select them later from the **Schemes** drop-down list box. When you have the sounds you want assigned, click **OK**.

REGIONAL SETTINGS

Some applications support international data display conventions. Click the **Regional Settings** icon on the Control Panel to open the Regional Settings Properties dialog box shown in Figure 9.53.

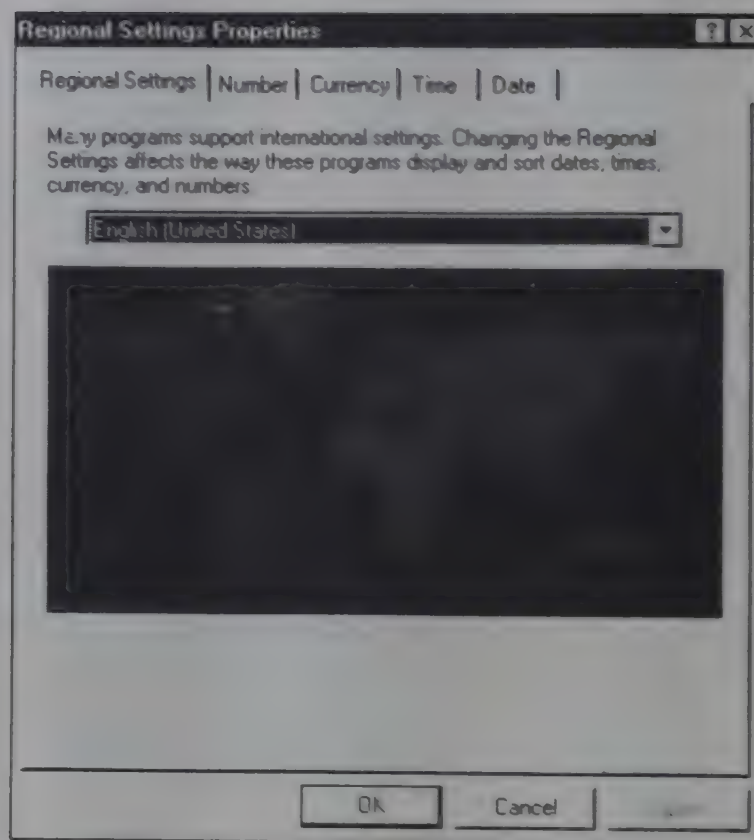


Figure 9.53 The Regional Settings Properties dialog box.

There are five pages in the Regional Settings Properties dialog box: **Regional Settings**, **Number**, **Currency**, **Time**, and **Date**.

The Regional Settings Page

The **Regional Settings** page allows you to select a region for which a common set of settings has been established. Subsequent pages permit you to change individual settings.

The Number Page

Figure 9.54 is the **Number** page in the Regional Settings Properties dialog box.

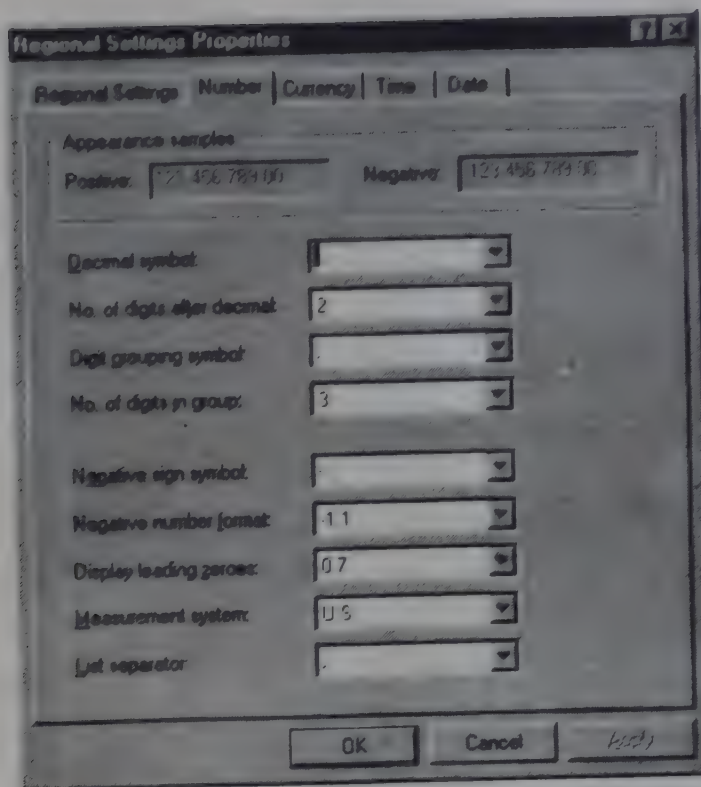


Figure 9.54 The Number page.

To reflect your preferences for displaying numbers, change the values in each of the **Number** page's drop-down list boxes.

The Currency Page

Figure 9.55 is the **Currency** page in the Regional Settings Properties dialog box.

Use the drop-down list boxes in the **Currency** page to specify how conforming applications display currency.

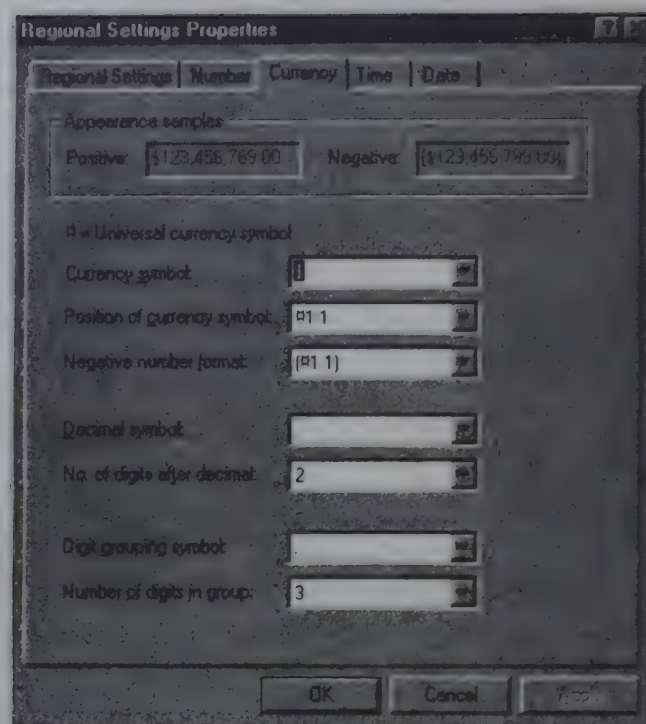


Figure 9.55 The Currency page.

The Time Page

Figure 9.56 is the **Time** page in the Regional Settings Properties dialog box.

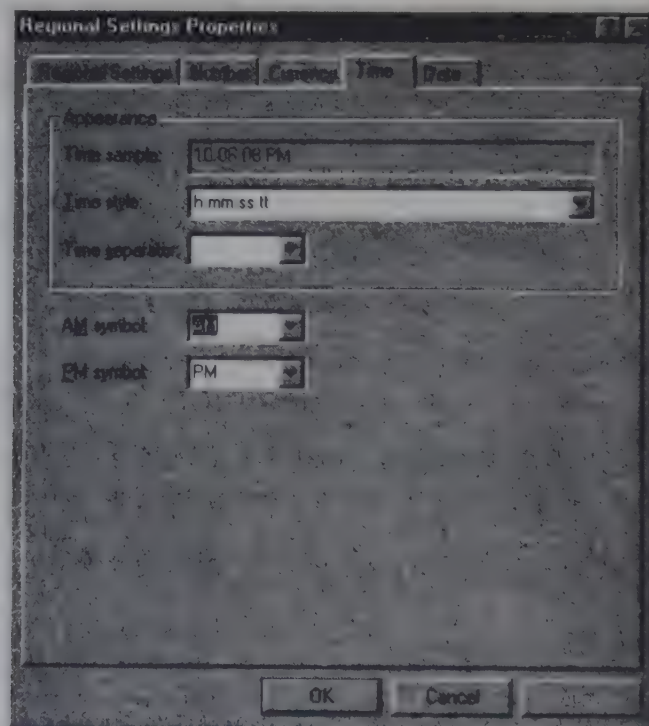


Figure 9.56 The Time page.

Use the drop-down list boxes in the **Time** page to specify how conforming applications display the time of day.

The Date Page

Figure 9.57 is the **Date** page in the Regional Settings Properties dialog box.

Use the drop-down list boxes in the **Date** page to specify how conforming applications display calendar dates.

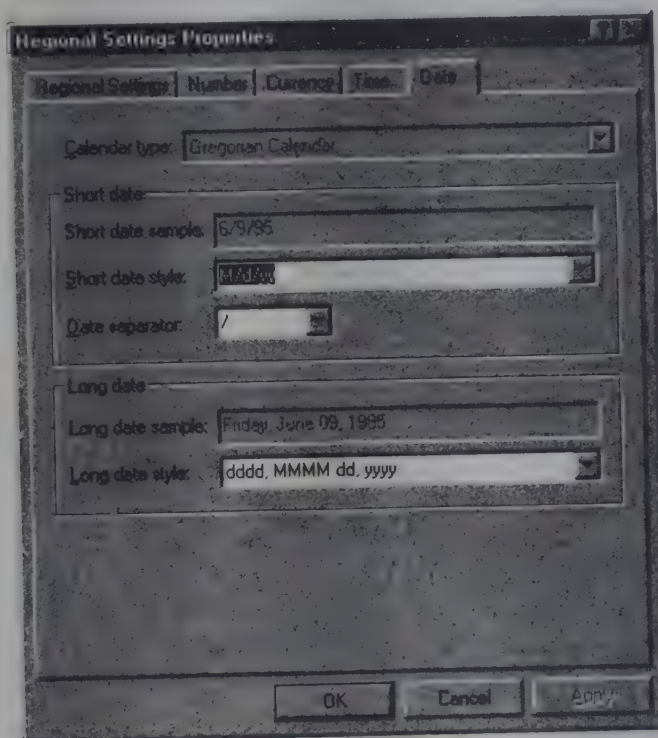


Figure 9.57 The Date page.

SYSTEM PROPERTIES

The **System** icon on the Control Panel opens the System Properties dialog box shown in Figure 9.58.

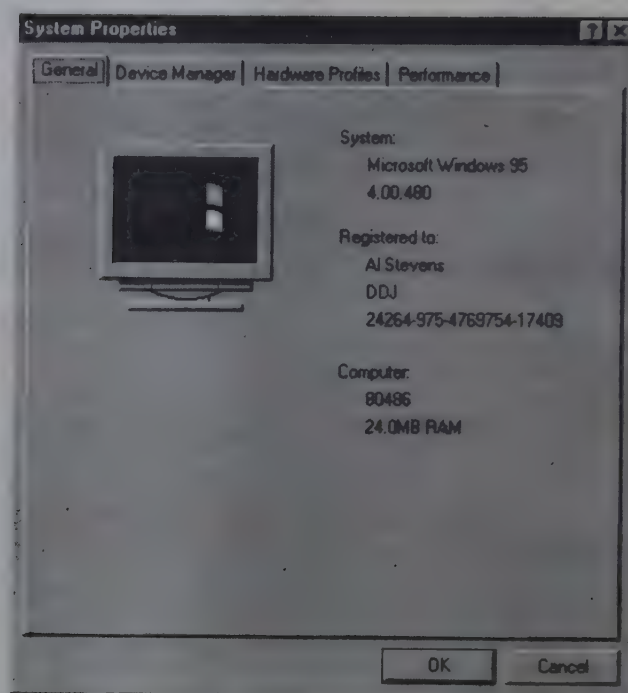


Figure 9.58 The System Properties dialog box.

There are four pages in the System Properties dialog box: the **General** page, the **Device Manager** page, the **Hardware Profiles** page, and the **Performance** page.

The General Page

The **General** page displays information about your system: its version, how you registered yourself during installation, and your CPU's type and memory size.

The Device Manager Page

The **Device Manager** page, shown in Figure 9.59, displays the devices installed in your system.

Each of the device types in the Device Manager's tree expands to show the devices of that type that are installed. You can click the + buttons to expand branches on the tree. Figure 9.60 shows the tree with the Modem device branch expanded.

The **Properties** button opens the Properties dialog box for the selected device. You can use this dialog box to modify the device's properties. The **Remove** button removes a device from the installation. The **Refresh** button updates the tree.

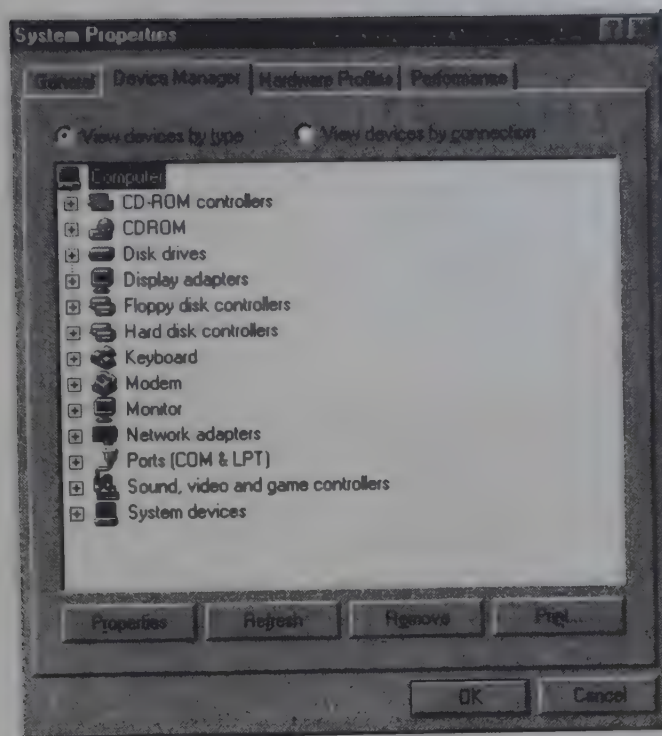


Figure 9.59 The Device Manager page.

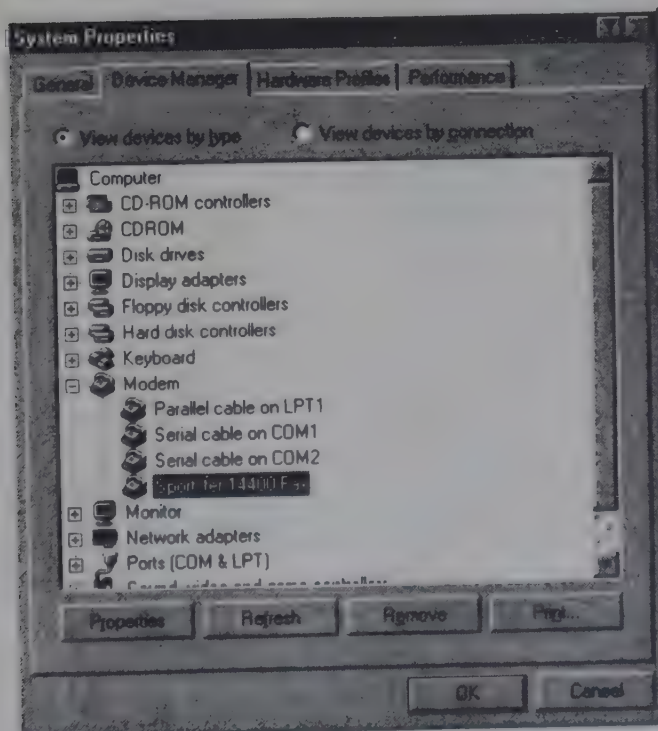


Figure 9.60 Modem tree expanded.

The Hardware Profiles Page

Figure 9.61 shows the **Hardware Profiles** page in the System Properties dialog box. A hardware profile is a configuration. The **Device Manager** page in Figure 9.60 shows one configuration, which is the default for the PC that I am using. You can specify multiple configurations from which to choose. When multiple configurations are defined, Windows 95 asks you which one to use when you boot the system.

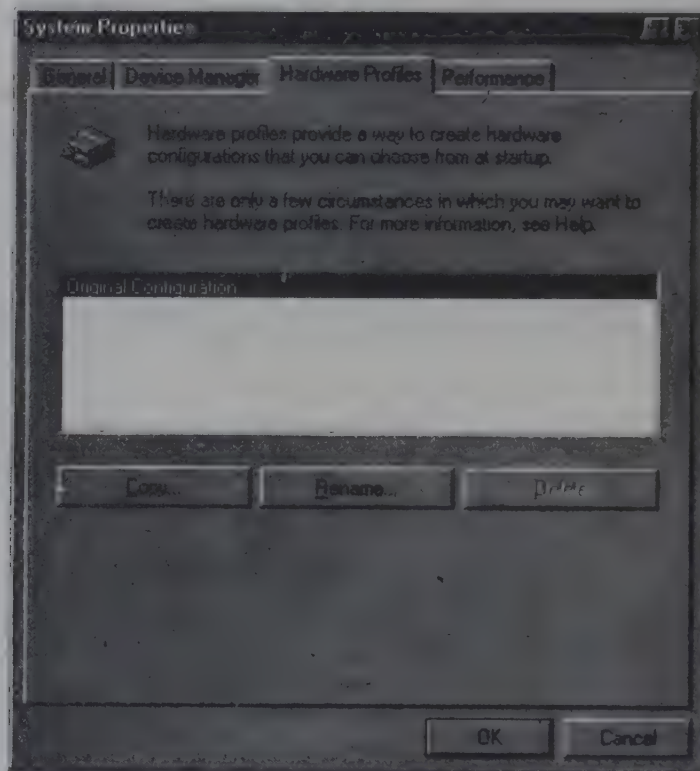


Figure 9.61 The Hardware Profiles page.

As the figure says, there are not many occasions where you would have more than one hardware profile. One example is a laptop that is configured with a modem and uses its built-in keyboard and screen on the road but uses an external keyboard, a video monitor, and a network adapter at home.

The Performance Page

Figure 9.62 is the **Performance** page in the System Properties dialog box.

The **Performance** page provides several highly technical options. If you are not particularly interested in the internal details of your PC's performance, you are better off skipping this one.

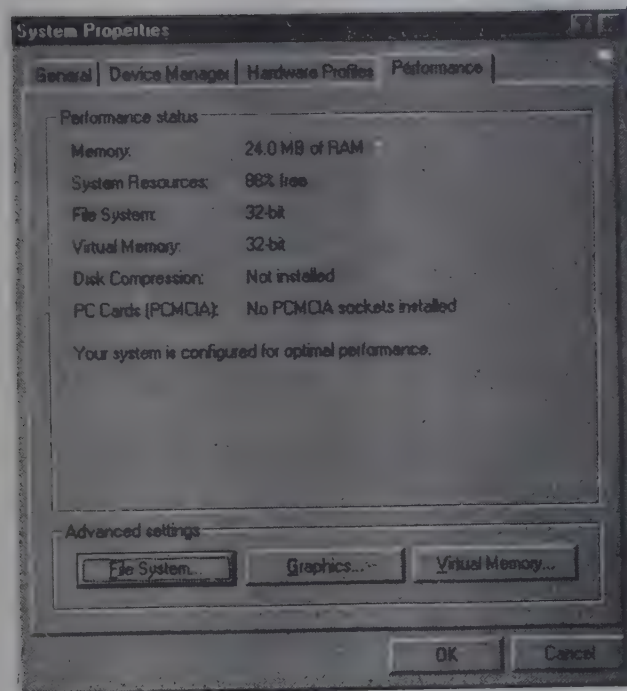


Figure 9.62 The Performance page.

File System

Clicking the **File System** button opens the File System Properties dialog box shown in Figure 9.63.

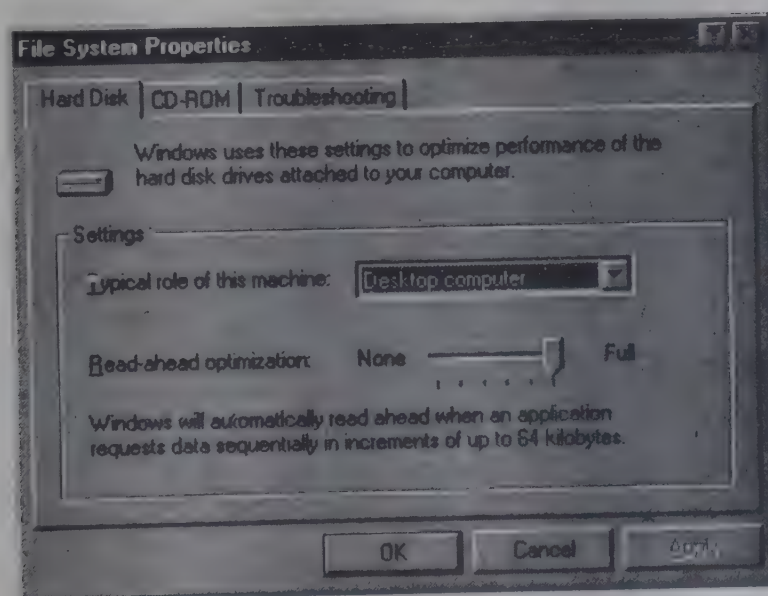


Figure 9.63 The File System Properties dialog box.

The **Hard Disk** page of the File System Properties dialog box lets you specify that the PC is used primarily as a desktop computer, a mobile or docking system, or a network server. Each of these operating environments works best with somewhat different hard disk management behavior, and Windows 95 adjusts these operations according to the specified purpose for the PC.

The **Read-ahead optimization** slide switch lets you adjust the amount of data read ahead of an application's request for sectors.

Figure 9.64 shows the **CD-ROM** page of the File System Properties dialog box.

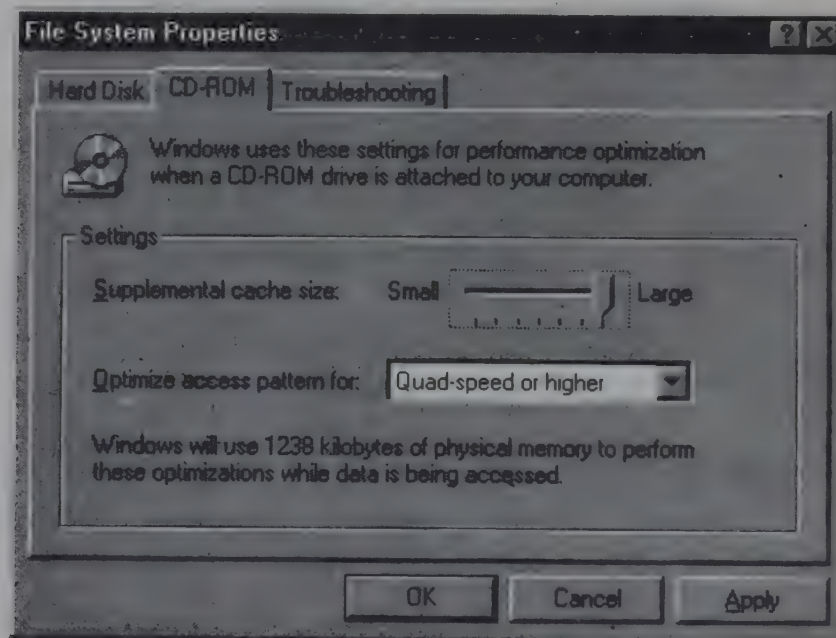


Figure 9.64 The CD-ROM page.

You can set the supplemental cache size with the slide switch. The **Optimize access pattern** drop-down list box offers these selections:

- ◆ No read-ahead
- ◆ Single-speed drives
- ◆ Double-speed drives
- ◆ Triple-speed drives
- ◆ Quad-speed or higher

Figure 9.65 is the **Troubleshooting** page of the File System Properties dialog box.

Checking the checkboxes on the **Troubleshooting** page disables the associated file processes. Note the strong recommendation above the settings.

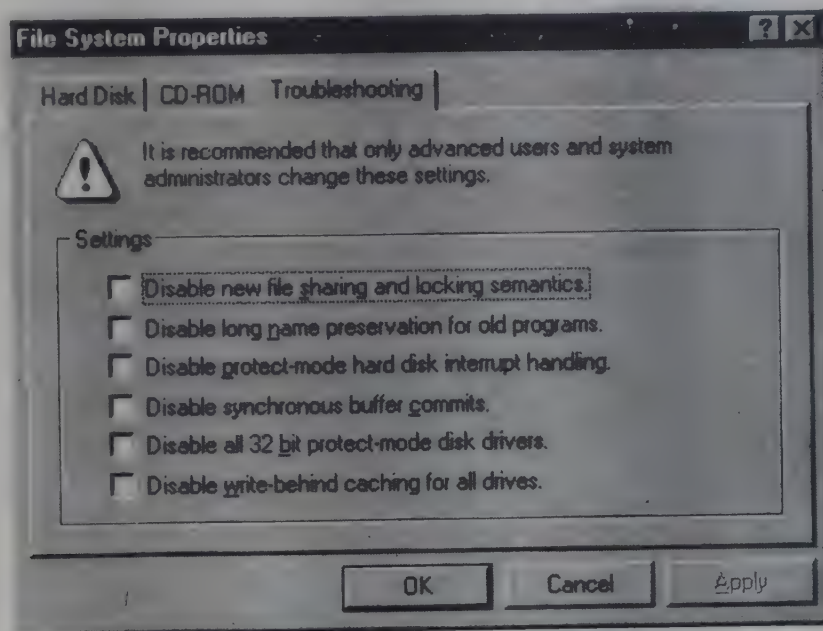


Figure 9.65 The Troubleshooting page.

Graphics

The **Graphics** button on the **Performance** page of the System Properties dialog box opens the Advanced Graphics Settings dialog box shown in Figure 9.66.

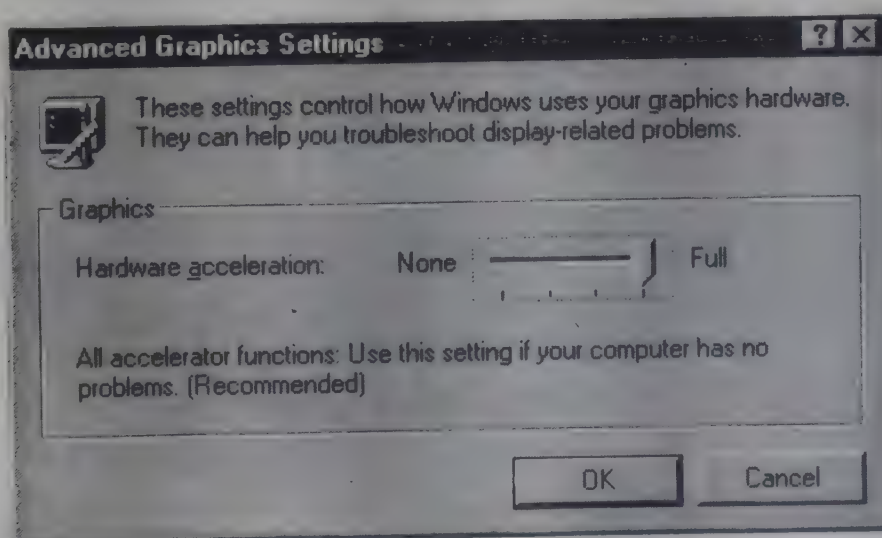


Figure 9.66 The Advanced Graphics Settings dialog box.

The slide switch has four stops: **No accelerator functions**, **Basic accelerator functions**, **Most accelerator functions**, and **All accelerator functions**. Each setting explains why you would use it.

Virtual Memory

The **Virtual Memory** button on the **Performance** page of the System Properties dialog box opens the Virtual Memory dialog box shown in Figure 9.67.

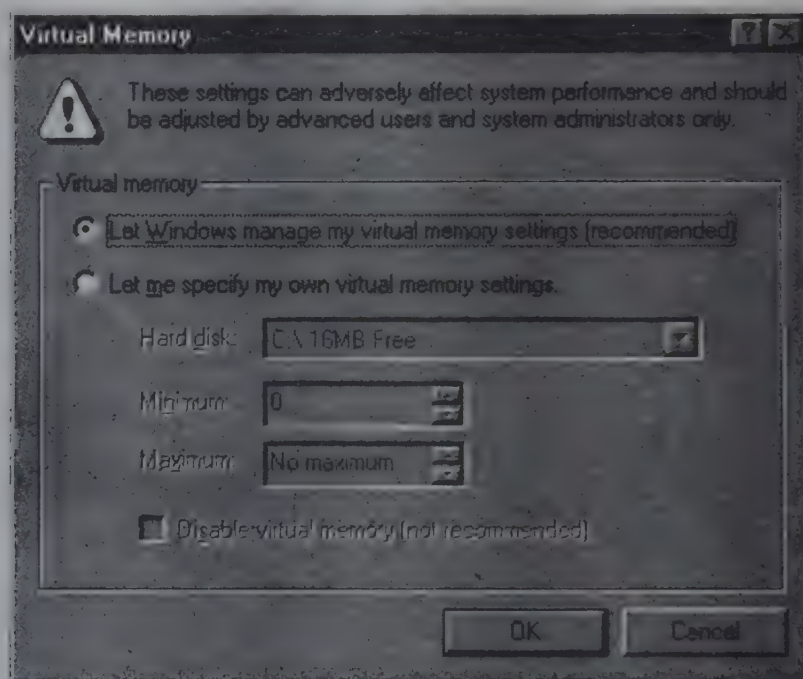


Figure 9.67 The Virtual Memory dialog box.

Once again, note the warning. Virtual memory is a disk file that Windows 95 uses for swapping programs and other memory resources during multitasking. You can specify which hard disk contains the virtual memory swap file and its minimum and maximum sizes. You can also disable virtual memory, which will severely affect the PC's ability to multitask.



CHAPTER 10

Hard Copy: Printing and Faxes

This chapter describes how to print documents and send and receive faxes. Windows 95 has built-in support for converting your work to hard copy or faxing it to others. Once you have everything set up, printing and faxing are as simple as making a few menu selections or dragging documents and dropping them onto devices. You will learn about:

- Setting up printers and fax/modems
- Printing and faxing from applications
- Sending faxes from Windows 95
- Receiving faxes
- Network printing and faxing

PRINTING

Most applications print reports and documents. The File menus of these applications have **Print** and **Page Setup** commands. If you've used earlier versions of Windows, you're accustomed to these conventions. There are other ways to print, however, and we'll discuss them all.

Setting Up Printers

Before you can print anything, you must tell Windows 95 about the printers on your PC and in your network. There are many different kinds of printers, and there are several ways that they can be connected to your PC. The first step in setting up a printer is to describe the printer make and model. Open My Computer on the desktop and open the Printers folder in My Computer. Figure 10.1 shows the Printers folder. If you've purchased your system already set up, Exchange may be installed, and you may see Microsoft Fax in your Printers folder. On a pre-configured system, you may need only to enter your printer information at startup—then you'll be in business.

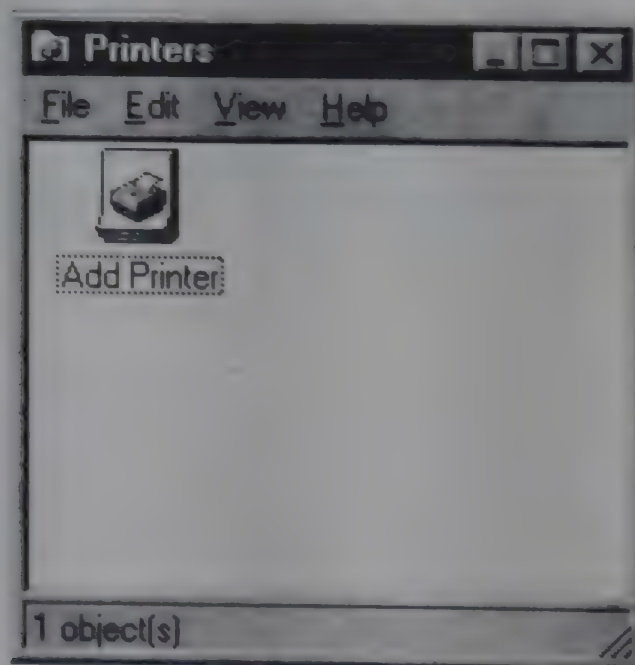


Figure 10.1 The Printers folder.

In this example, no printers have been installed. To add a printer, double-click the **Add Printer** icon. This action opens the Add Printer wizard shown in Figure 10.2.

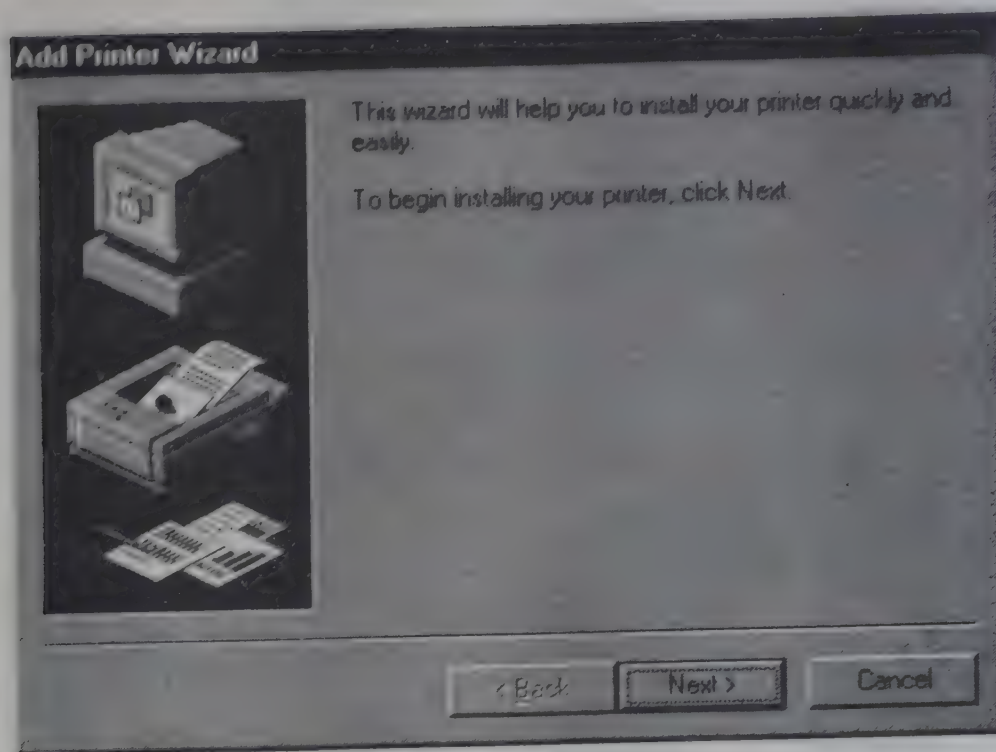


Figure 10.2 The Add Printer wizard.

Click **Next** to select a network or local printer. Figure 10.3 shows that selection on the Add Printer wizard.

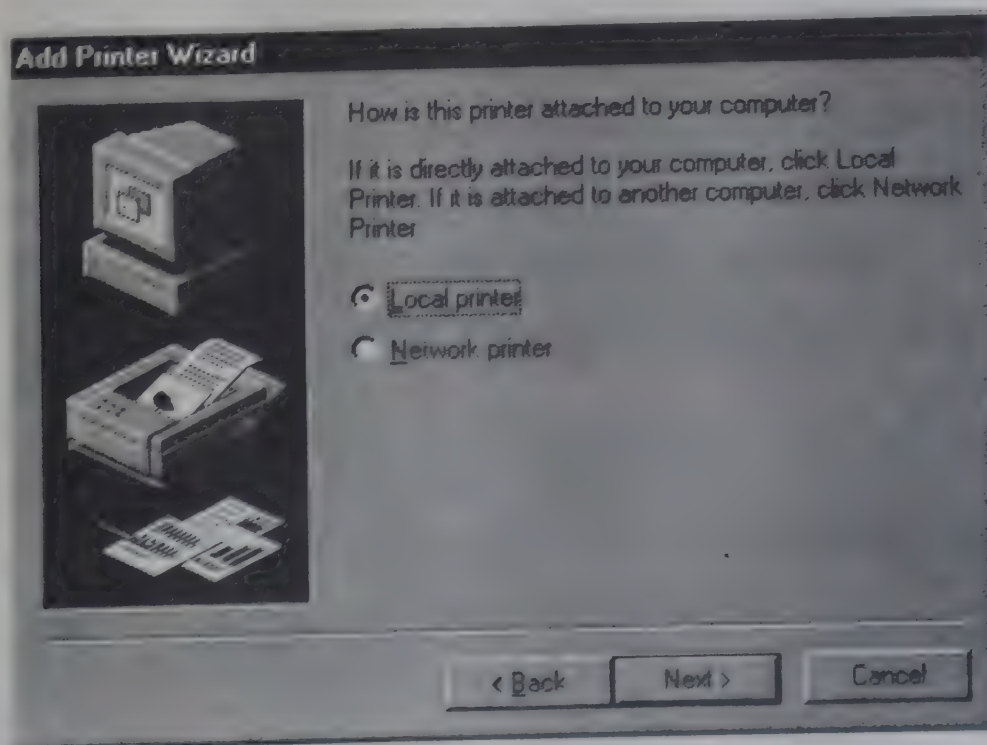


Figure 10.3 Selecting a local or network printer.

A *local* printer is one that is connected directly to your computer; a *network* printer is on another computer in the network. A local printer can also be a network printer in that it can be shared with other computers in the network, but from the view of the local computer the printer is local. In this example, we install a local printer. Click **Next**. In Figure 10.4, the Add Printer wizard provides a list of printer manufacturers and models.

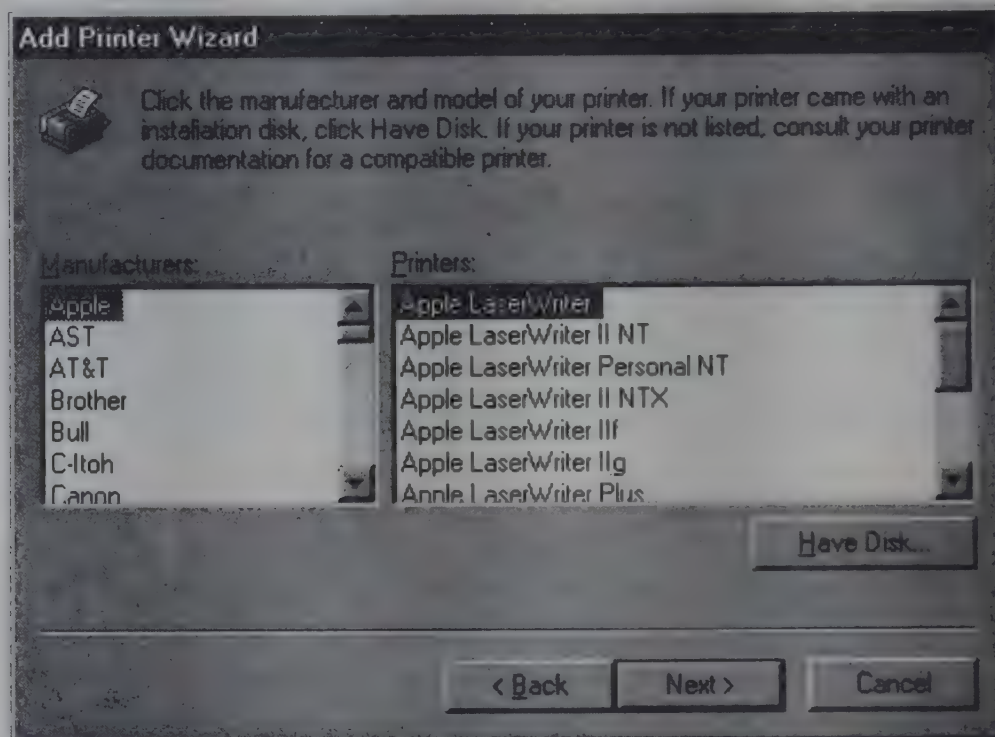


Figure 10.4 Printers to install.

If your printer is not on the list and a diskette with Windows 95 drivers is included with the printer, click **Have Disk** to install the printer from the diskette. Otherwise, select the manufacturer of your printer and the specific printer to install and click **Next**. The Add Printer wizard displays port selections as shown in Figure 10.5.

Windows 95 has all the latest printer drivers available in the Windows 95 Driver Library. Use your Web browser to go to Microsoft's home page (<http://www.microsoft.com>) and click **Free Downloads**. Then follow the directions on the screen.

The ports in the list are those available on your PC. Most contemporary printers use LPT1 or LPT2. Some printers use COM devices. If you choose **FAX** or **PUB**, output to this printer device is intercepted by the fax system installed on your PC. If you choose **FILE**, the print output is written to a disk file instead of to

a printer. In this example, we assume that the printer is connected to LPT1, so we click **Next**. In Figure 10.6, the Add Printers wizard asks us to give the printer a name and to specify whether the printer is to be the default printer.

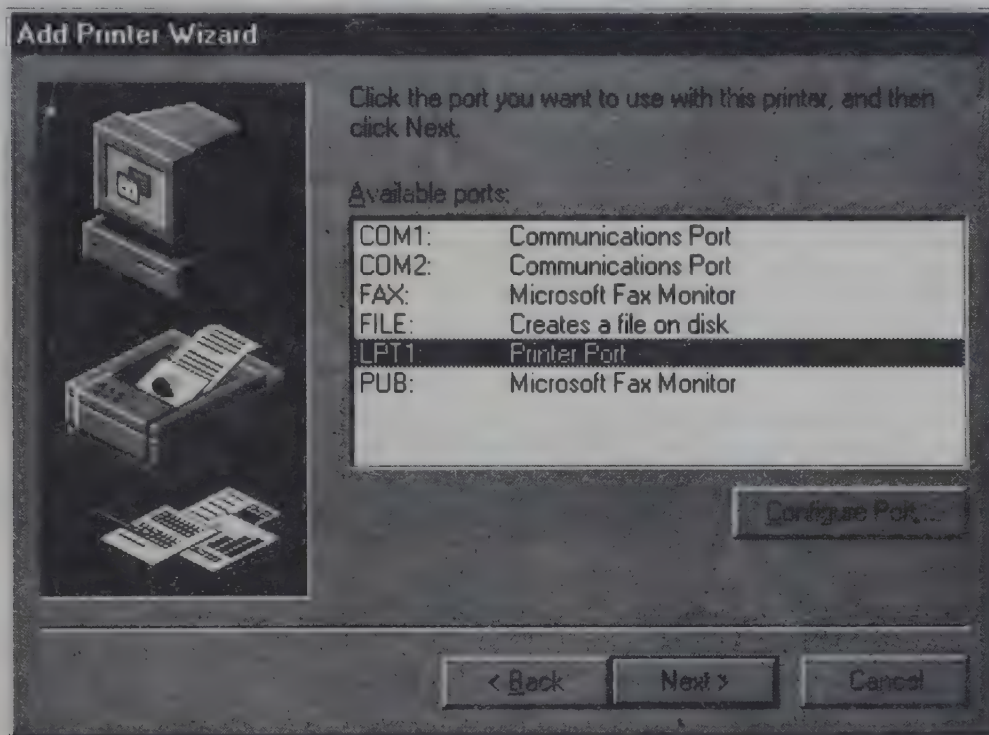


Figure 10.5 Selecting a printer port.

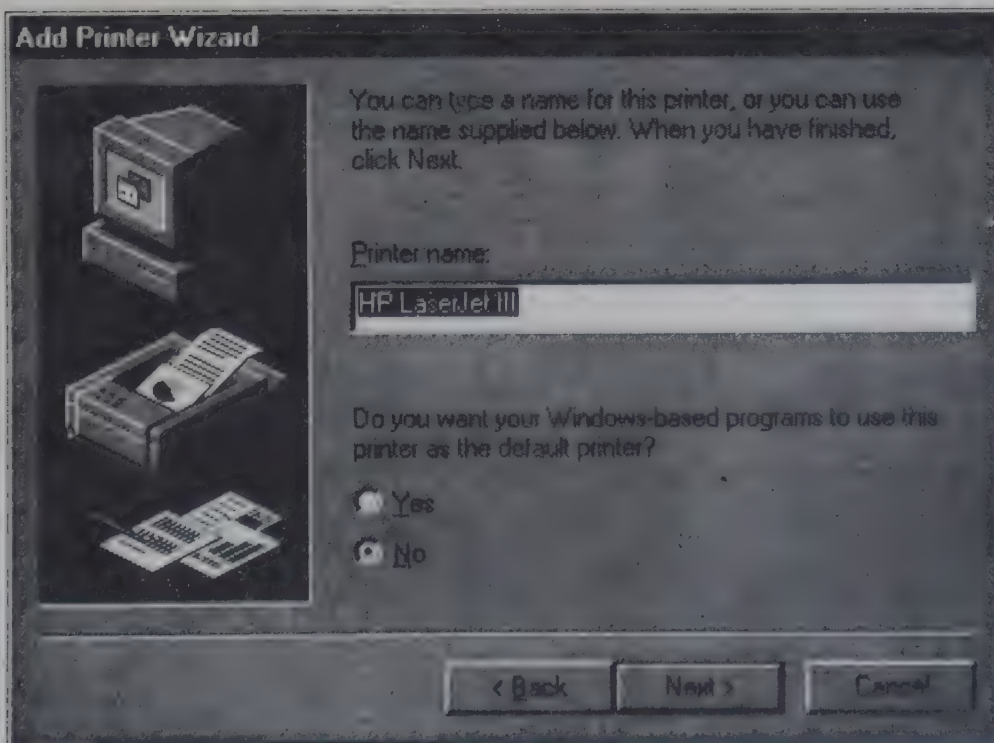


Figure 10.6 Naming the printer and selecting the default.

The name selected by the wizard is usually sufficient. If, however, you are installing several printers of the same type, you can give them unique names so that you can tell them apart when you select a destination printer for a report.

Inasmuch as this is the first printer we are installing and the only local printer, it should be the default. Click the **Yes** radio button and then click **Next**. The wizard asks whether you want to print a test page. If the printer is currently connected, turned on, and loaded with paper, you can do that, after which you can click **Finish**. The wizard copies the necessary files from the Windows 95 CD-ROM or installation diskettes, and the installation of your printer is complete. You can open the Printers folder in the My Computer window and see that the printer was installed, as shown in Figure 10.7.

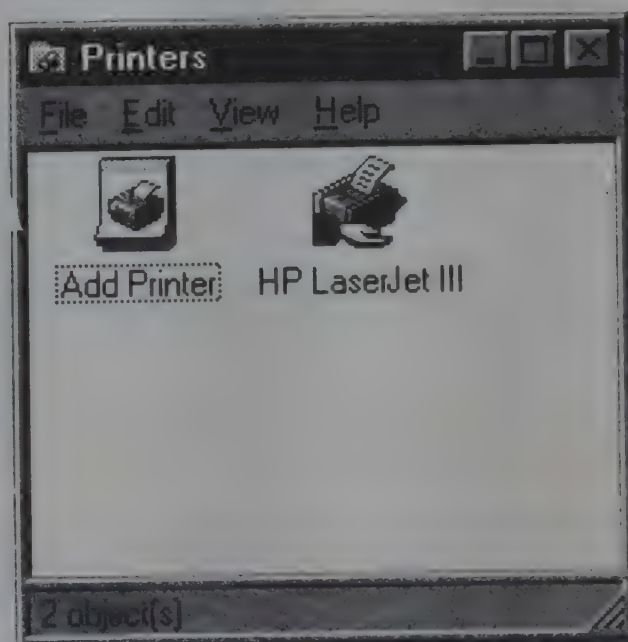


Figure 10.7 The Printers folder with an installed printer.

PUTTING A PRINTER ON THE DESKTOP

You can put a shortcut to a printer on the desktop. If you do a lot of printing from documents or if you frequently check the status of queued print documents, having the printer available on the desktop is convenient. To put the printer on the desktop, drag its icon from the Printers folder to the desktop. Answer **Yes** to the question in Figure 10.8.

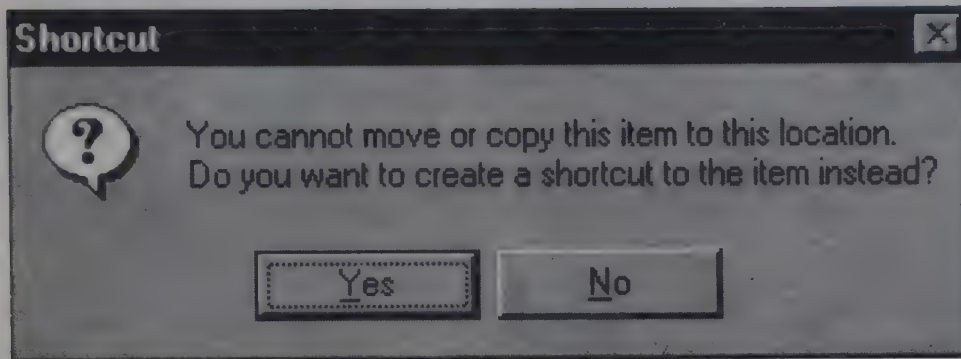


Figure 10.8 Creating a printer shortcut.

If you want to avoid that question, drag the icon by using the right mouse button. This action automatically creates a shortcut.

Setting the Default Printer

Applications print to the default printer unless you tell them otherwise. Some applications can print only to the default printer. Notepad is an example. To set the default printer, either open the Printers folder in My Computer or select a printer shortcut. Right-click the icon for the printer to open its context menu. Choose the **Set As Default** command.

Printing from Documents

Recall from Chapter 3 that we created a letter with the Notepad application, and in Chapter 5, we stored the letter in a folder on the desktop. You can open the folder and drag the letter to the printer icon. If you built the printer shortcut described in the previous discussion, the printer icon is now on the desktop.

Dragging a document to a printer icon tells the application that created that document to print the document using the target printer as the output device. If the target printer is not the default printer and the document was created by an application that does not use the standard Print dialog box, the Printing Error dialog box shown in Figure 10.9 is displayed.

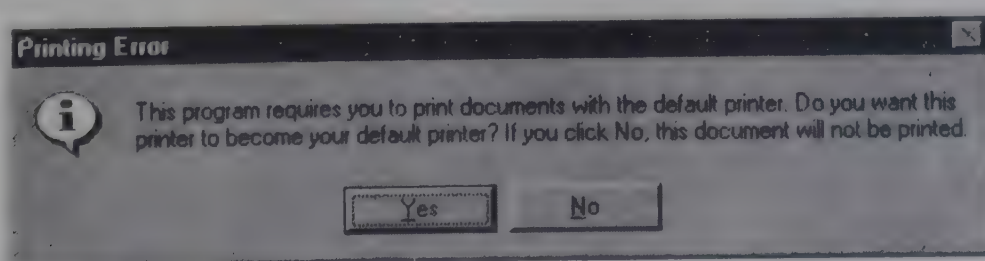


Figure 10.9 The Printing Error dialog box.

Printing from Applications

You print from applications by using the **Print** command on the File menu. Sometimes you have to set up the page, and most Windows 95 applications include the **Page Setup** command on the File menu.

Page Setup Dialog Box

Figure 10.10 is the Page Setup dialog box that Word Pad's **Page Setup** command opens.

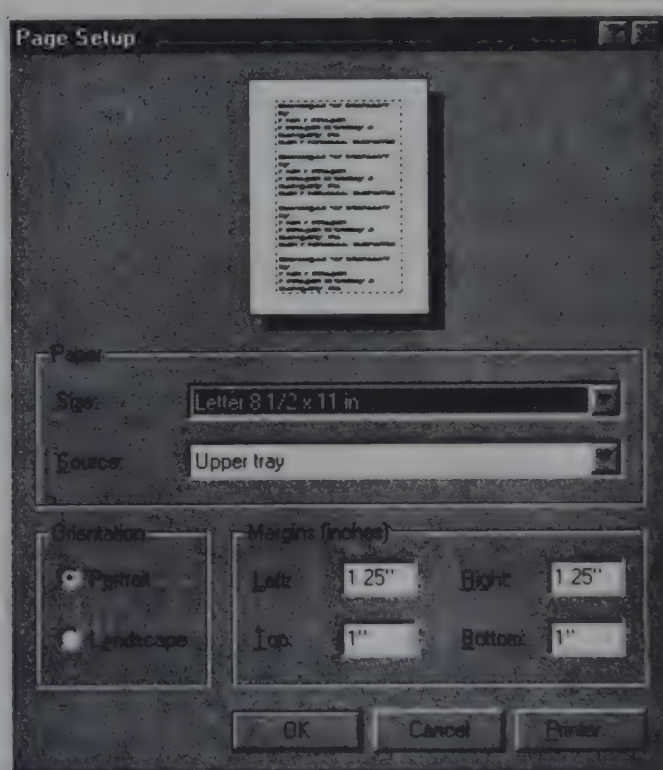


Figure 10.10 The Page Setup dialog box.

You can select a portrait or landscape orientation if the current default printer supports these modes. You can also select paper size and the source of the paper. You can set the printer's margins, which are independent of the document margins set in application-dependent operations. The **Printer** button opens a different Page Setup dialog box, which is shown in Figure 10.11.

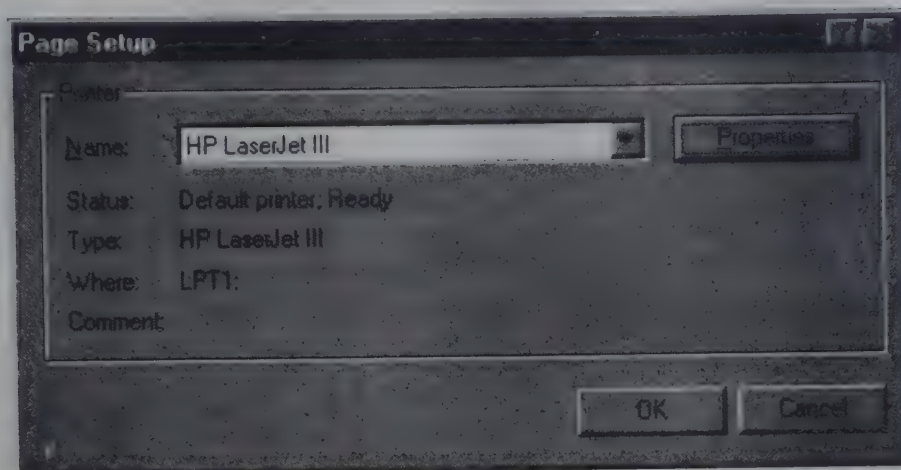


Figure 10.11 Another Page Setup dialog box.

The **Name** drop-down list box lets you select from the installed printers. The **Properties** button opens a Properties dialog box with selections that depend on the printer you have installed. Figure 10.12 shows the Properties dialog box for my printer.

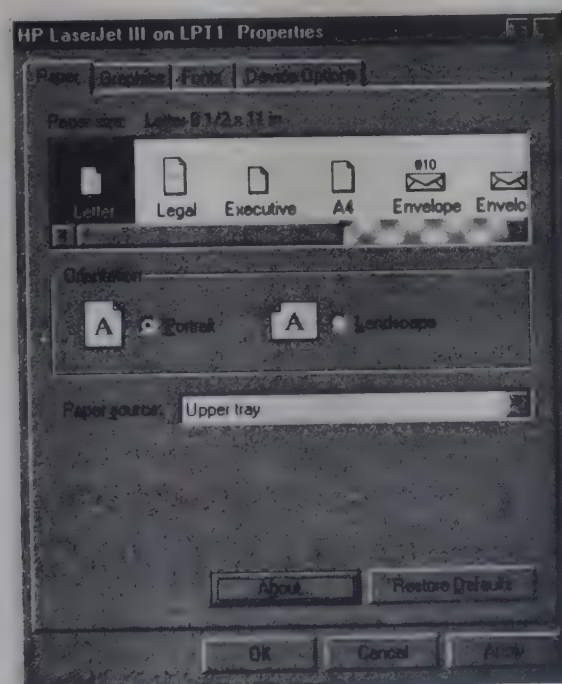


Figure 10.12 LaserJet Properties dialog box.

Print Dialog Box

The **Print** command on an application's File menu opens the Print dialog box shown in Figure 10.13.

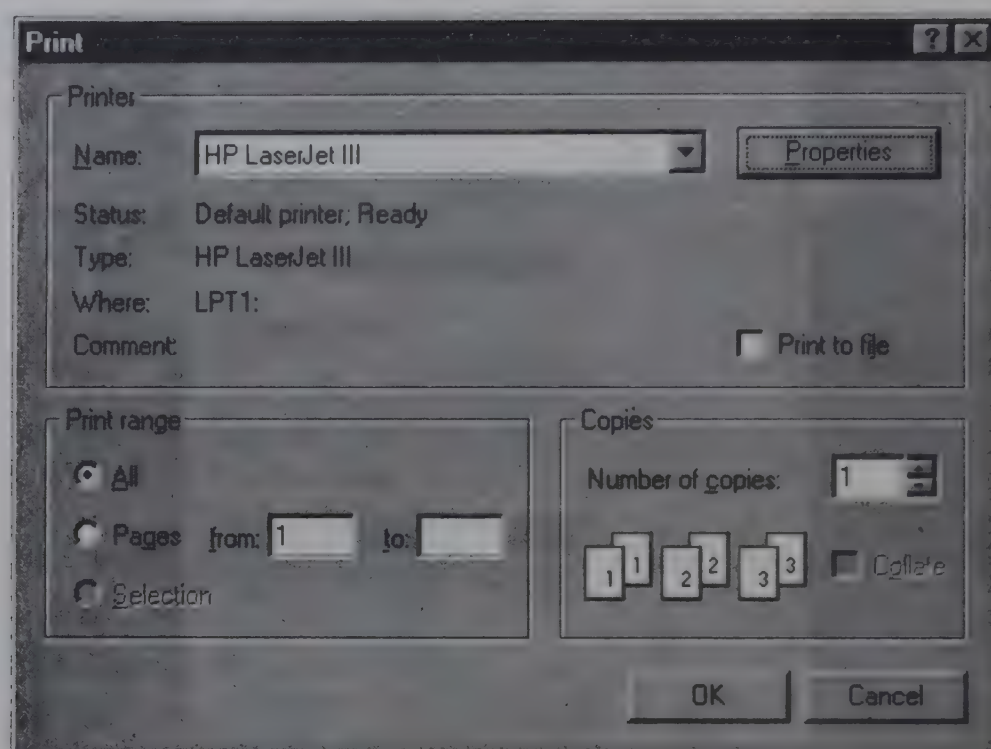


Figure 10.13 The Print dialog box.

The **Name** and **Properties** controls in the Print dialog box are the same as those in the Page Setup dialog box's **Printer** selection. The Print dialog box allows you to print all the pages in the document, only a specified range of pages, or only that part of the document that is selected—marked with the mouse or **Shift+cursor** keys. You can specify the number of copies to be printed and, if the printer has a collator, how to collate the copies.

Printing to Network Printers

To print to a network printer, you must first associate a local printer icon with a shared network printer on another PC in the network.

Installing a Network Printer

Open the **Printers** folder from **My Computer** and double-click the **Add Printer** icon. When you get to the screen shown in Figure 10.3, select **Network printer** and click **Next**. The wizard now asks for a network printer to install, as shown in Figure 10.14.

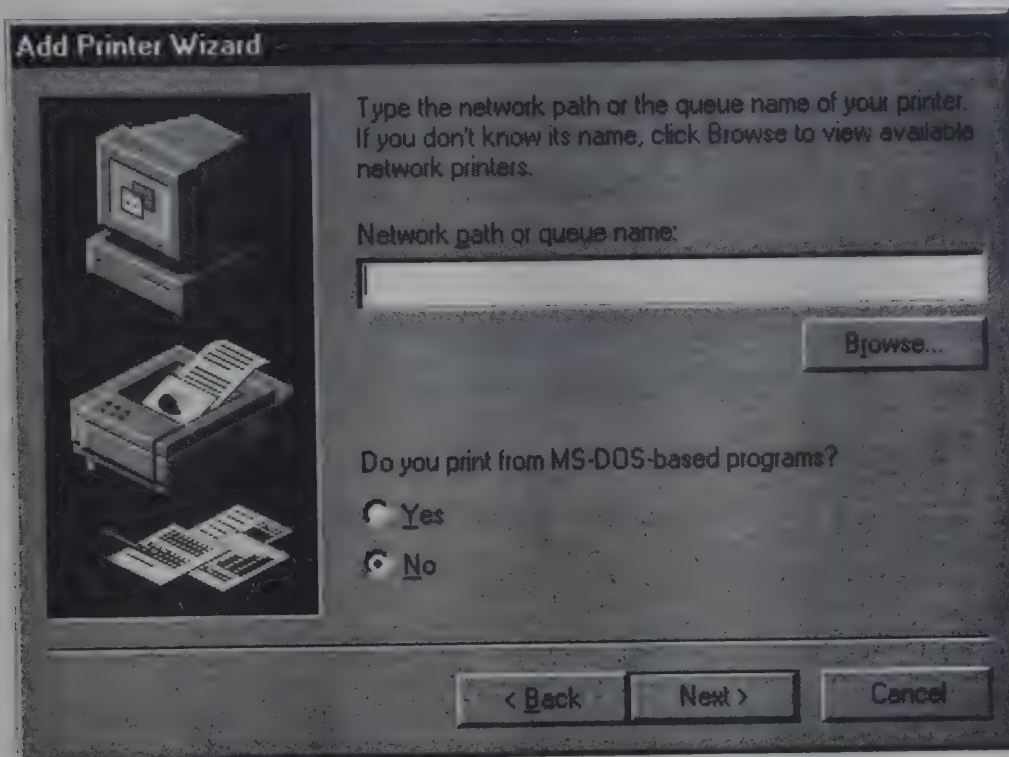


Figure 10.14 Selecting a network printer.

If you know the path to the printer, type it into the text box. For this exercise, we'll assume that you do not. Click **Browse** to view the Browse for Printer dialog box shown in Figure 10.15.

The Browse for Printer dialog box displays a tree of all the print servers on the network. A *print server* is a computer that has at least one shared printer. Let's assume that you want to use a printer that is on the PC named Chicago. Click the + button next to the Chicago icon to expand the tree and see the shared printers connected to the Chicago print server. Figure 10.16 shows that expansion.

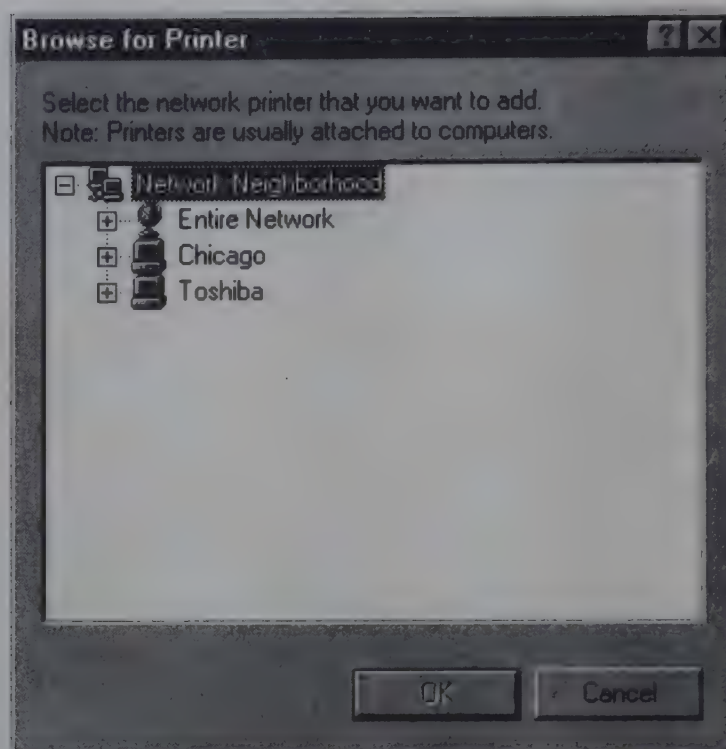


Figure 10.15 Browse for Printer dialog box.

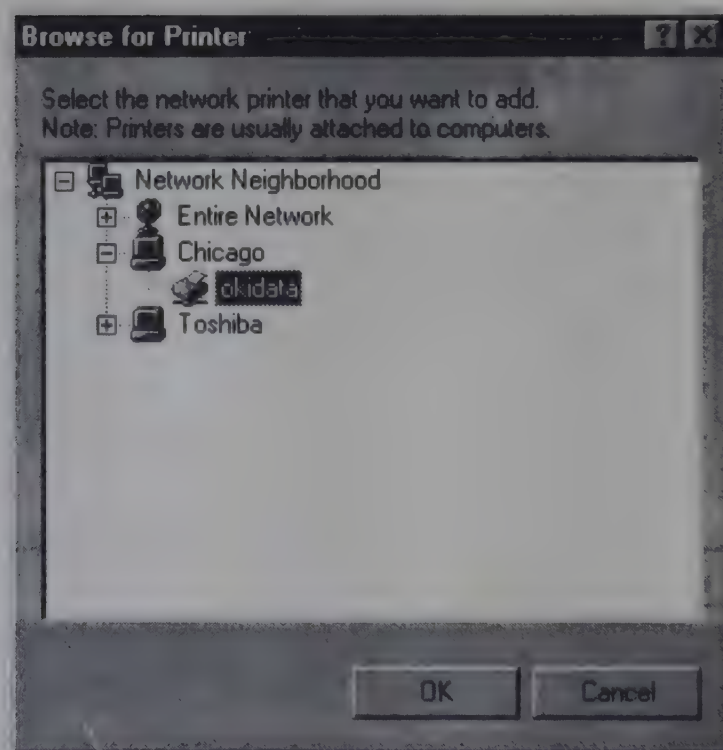


Figure 10.16 Print server expanded.

Select the printer under Chicago and click **OK**. The network path to the printer is entered into the text box in Figure 10.13's Add Printer wizard. Click **Next** and proceed to install the printer just as you did from Figure 10.6 when you were installing a local printer. When you are finished, the network printer is installed in the Printers folder in My Computer, as shown in Figure 10.17.

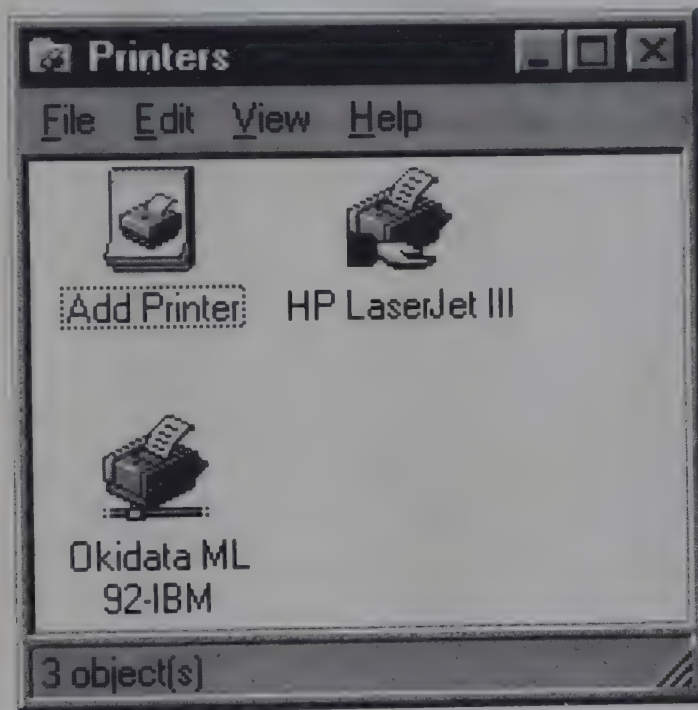


Figure 10.17 Network printer installed.

Now you can print to the network printer using the same procedures that you use to print to a local printer.

Sharing a Printer

You can share your printer with other users on a network. This practice is common. There are many kinds of printers with different uses, and some of them are expensive. Sharing expensive assets is a cost-effective measure. Your organization might have one color laser printer, a flatbed plotter, a laser with a collator, a printer with special forms loaded, and so on, and members of the staff share these printers from their own PCs.

To share your printer on the network, select the printer in the Printers folder. You must specify sharing from the Printers folder; shortcuts to printers cannot be shared. Right-click the **printer** icon to open the printer's context

menu. Choose the **Sharing** selection to open the printer's Properties dialog box. The dialog box opens to the **Sharing** page shown in Figure 10.18.

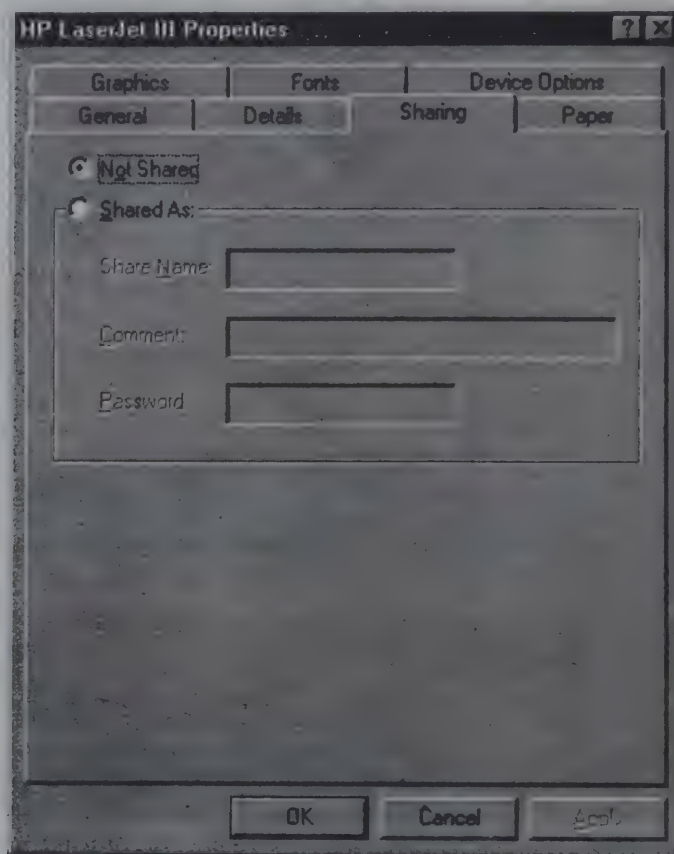


Figure 10.18 The Sharing page.

Click **Shared As**. The system fills in a **Share Name**, which you can change. This is the name by which other people on the network know your printer. You can enter a comment, but the other users do not see the comment; it is for your reference only. You can also specify a password to restrict access to your printer. Only the people who know the password can share the printer. For example, perhaps not everyone should have access to the printer where checks are printed. Figure 10.19 shows the **Sharing** page filled out.

Click **OK** to share the printer. If you entered a password, you are asked to enter it again to verify it. The printer is now available to other users.

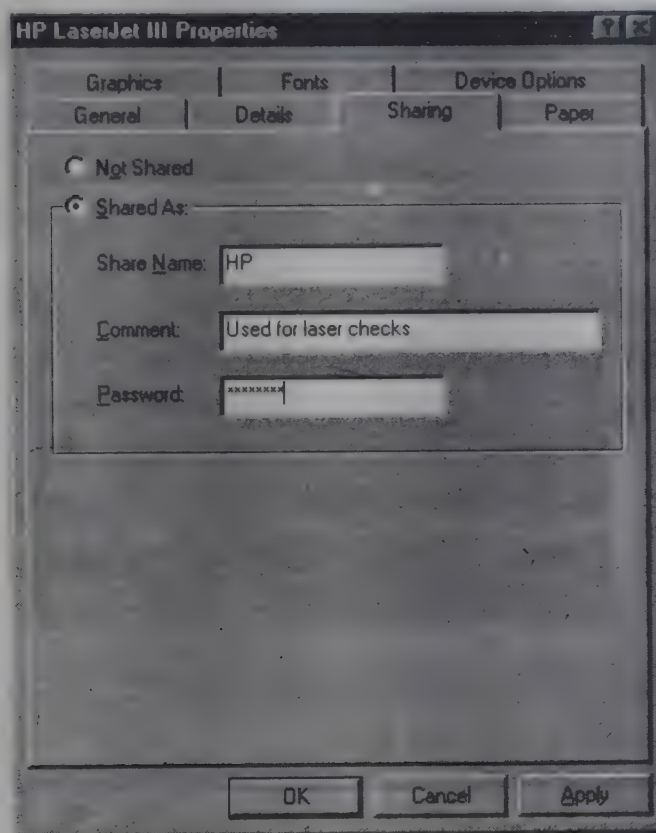


Figure 10.19 The Sharing page filled out.

Monitoring Print Queues

You can view the status of print jobs queued to a printer by double-clicking its icon or choosing the **Open** command on the icon's right-click menu. This action opens the printer queue dialog box shown in Figure 10.20.

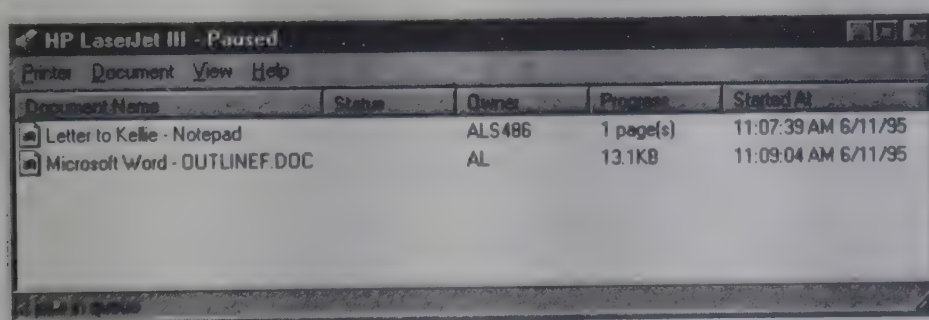


Figure 10.20 Printer queue display.

You can also open the display in Figure 10.19 for a local printer that has documents queued by double-clicking the printer icon on the right end of the Taskbar. This icon appears when print jobs are queued and disappears when the print queue is empty.

The Printer menu has commands that permit you to pause and resume printing the current document and purge all documents from the queue. You can use these operations only for local printers.

The Document menu allows you to pause the printing of a selected document or cancel it from the queue. You can use these operations only if the printer is local or you initiated the printout to a network printer.

FAXES

To send and receive faxes, you must install the necessary hardware and software components. If the modem you installed in Chapter 9 is a fax/modem, you can send and receive faxes directly through that modem. Otherwise, you must use a shared fax/modem on another computer in the network.

Installing Fax Support

To send and receive faxes with your PC, install the Microsoft Fax service. You may have installed it during setup. If not, take these steps:

1. Open the Add/Remove Programs dialog box from the Control Panel.
2. Change to the **Windows Setup** page.
3. Select **Microsoft Fax**.
4. Click **Details** to open the Microsoft Fax dialog box and select both components.
5. Click **OK** in the Microsoft Fax dialog box.
6. Click **OK** in the Add/Remove Programs dialog box. Windows 95 copies the software from its CD-ROM or installation disks. Then restart your computer.

If you have not yet installed Microsoft Exchange, the installation of Microsoft Fax initiates that procedure now. Chapter 12 describes the installation of Microsoft Exchange.

Building Cover Pages

A fax can include a cover page. When you send a fax to someone in an organization, the fax machine could be shared by many people. A cover page tells whomever monitors the fax the recipient's name. In many cases, the cover page can be the complete fax because it can contain the message in addition to the addressing information. In other cases, the cover page identifies the recipient, and the body of the fax is a separate document.

Some users have reported having a problem when creating a fax cover page with Microsoft Fax. In response, Microsoft developers have created a fix that solves the problem. If you have difficulty with the fax cover page, download the fix from Microsoft's Web site (<http://www.microsoft.com>). For instructions on how to download software from Microsoft's Web site, see Appendix B.

Microsoft Fax includes four standard cover pages. You can modify these cover pages to match your preferred style, creating completely new ones.

Choose the **Cover Page Editor** command on the Start menu's Programs/Accessories/Fax menu to open the Cover Page Editor application.

The Cover Page Editor includes commands for creating text and graphics on a cover page. You can modify an existing cover page by opening it using the **Open** command in the File menu.

Windows includes a sample fax cover page in the Windows Subdirectory, where your program files are stored. The name of the file, **GENERIC**, appears in the File menu by default, so you can easily load the cover page the first time you use the program. When you save cover pages you select, the Save As dialog box displays the Windows directory. You can then navigate to the subdirectory in which you want to save your pages.

Figure 10.21 shows a cover page that I created for my personal faxes.

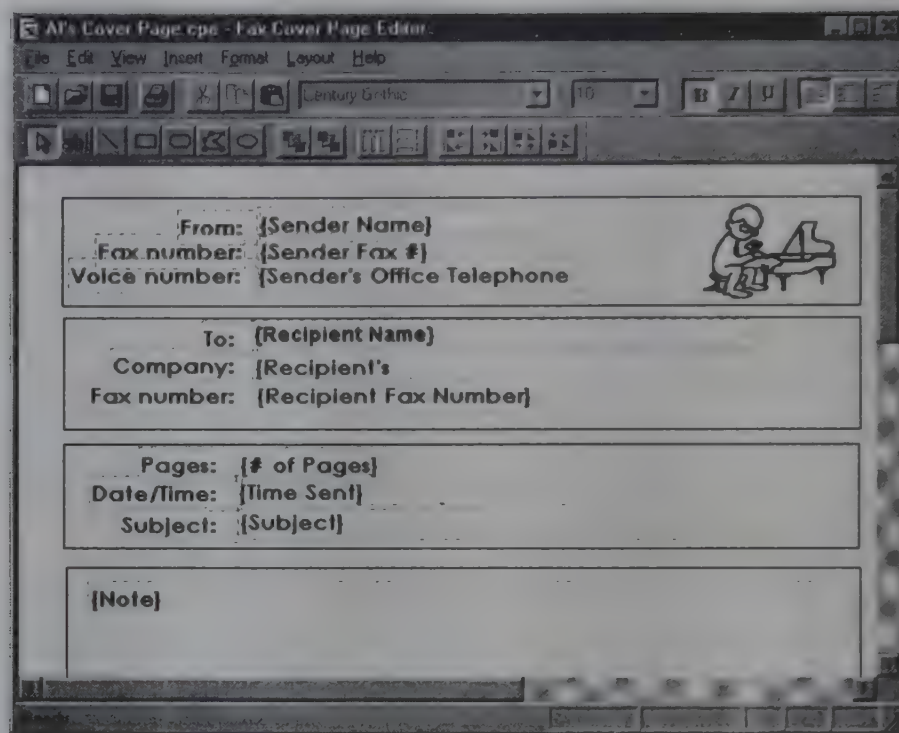


Figure 10.21 The Cover Page Editor.

The text lines inside braces are *tokens* that Microsoft Fax recognizes as variable components to be filled in when it prepares the fax for transmission. The sender values come from properties that you provide when you send the fax. The recipient values come from the properties that you provided when you installed Windows 95 and Microsoft Exchange.

These tokens and their text labels are inserted into the cover page by commands on the Editor's Insert menu. I added the graphic by copying it to the clipboard from Paint and pasting it into the cover page. Then I resized and moved it.

Sending a Fax

There are several ways to send a fax. You send a fax from the Compose New Fax accessory application, from applications that can print, or from documents created by applications that print. All these actions launch the Compose New Fax wizard.

From Accessories/Fax

Choose the **Compose New Fax** command on the Start menu's Programs/Accessories/Fax menu to open the Compose New Fax wizard. We'll discuss the wizard later in this chapter.

From Applications

If the application's File menu has a **Print** command and if that **Print** command uses either the standard Print or Page Setup dialog box, you can send a fax by selecting **Microsoft Fax** as the destination printer. If the application's **Print** command does not use either standard dialog box, you can set **Microsoft Fax** as the default printer before choosing the **Print** command. See "Setting the Default Printer" earlier in this chapter.

From Documents

Fax a document by dragging it from a folder to the Microsoft Fax icon in My Computer's Printers folder. You can also drag the document to a shortcut to Microsoft Fax.

If Microsoft Fax is not the default printer and the document was created by an application that does not use the standard Print dialog box, the Printing Error dialog box shown in Figure 10.9 is displayed.

The Compose New Fax Wizard

All the preceding actions launch the Compose New Fax wizard shown in Figure 10.22.

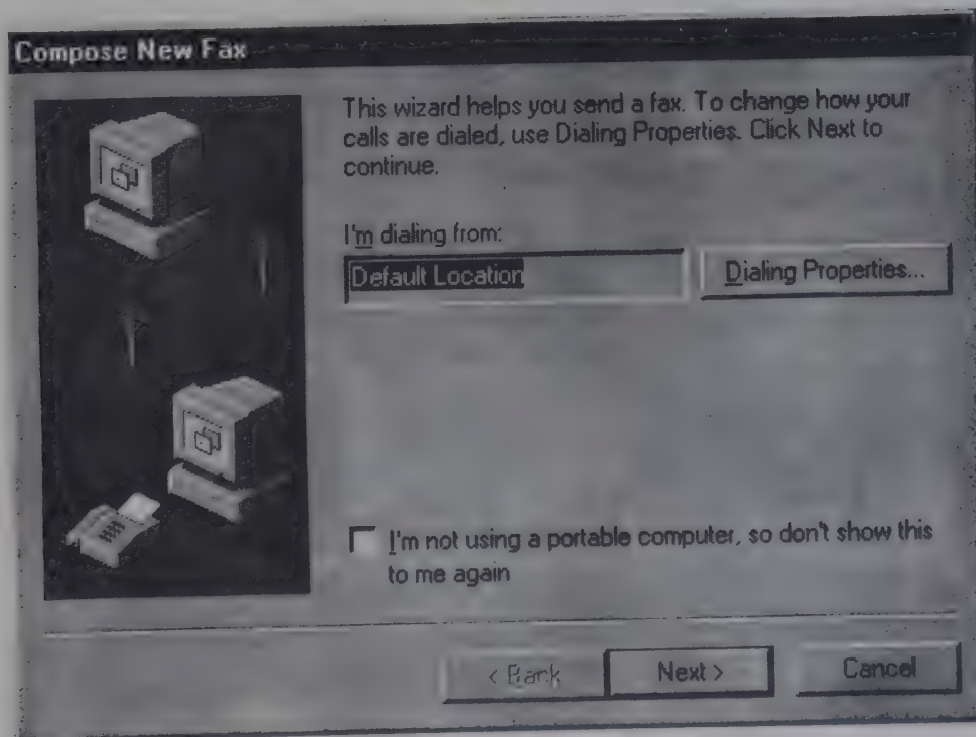


Figure 10.22 The Compose New Fax wizard.

The first screen of the wizard allows you to configure your dialing properties. This feature is convenient when you are on the road—dialing conventions differ in different locales. This subject is dealt with in more detail in Chapter 14, which is about using Windows 95 on the road. For now we assume that you are working at your desktop PC, that dialing conventions have been established, and that they do not change. You can check the checkbox to suppress subsequent displays of the first page of the Compose New Fax wizard. Click **Next** to proceed to the next page of the wizard.

In Figure 10.23, the wizard asks for the recipient of the fax.

Enter a name in the **To:** control and a phone number in the **Fax #** control. Click **Add to List** to add the name to the **Recipient list**. You can specify several names and phone numbers to receive the fax. Click **Next** when the list is complete.

In Figure 10.24, the wizard asks whether you want to send a cover page and allows you to set options about how and when to send the fax.

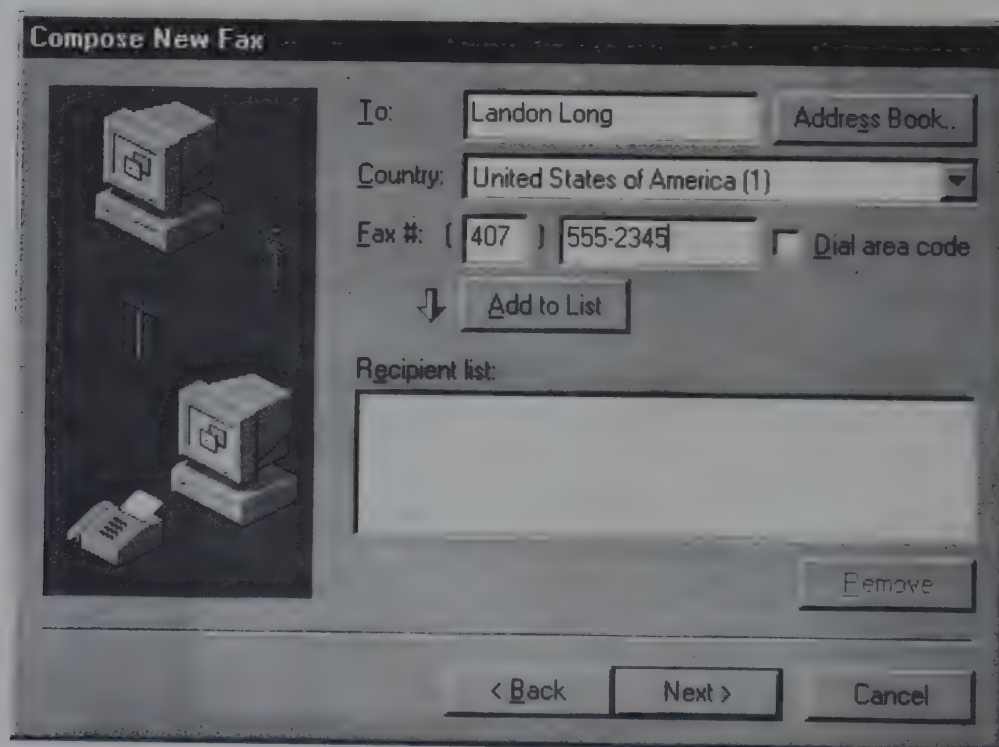


Figure 10.23 Specifying fax recipients.

If you want a cover page, click the second radio button and select a cover page from the list. Click **Options** to open the Send Options dialog box shown in Figure 10.25.

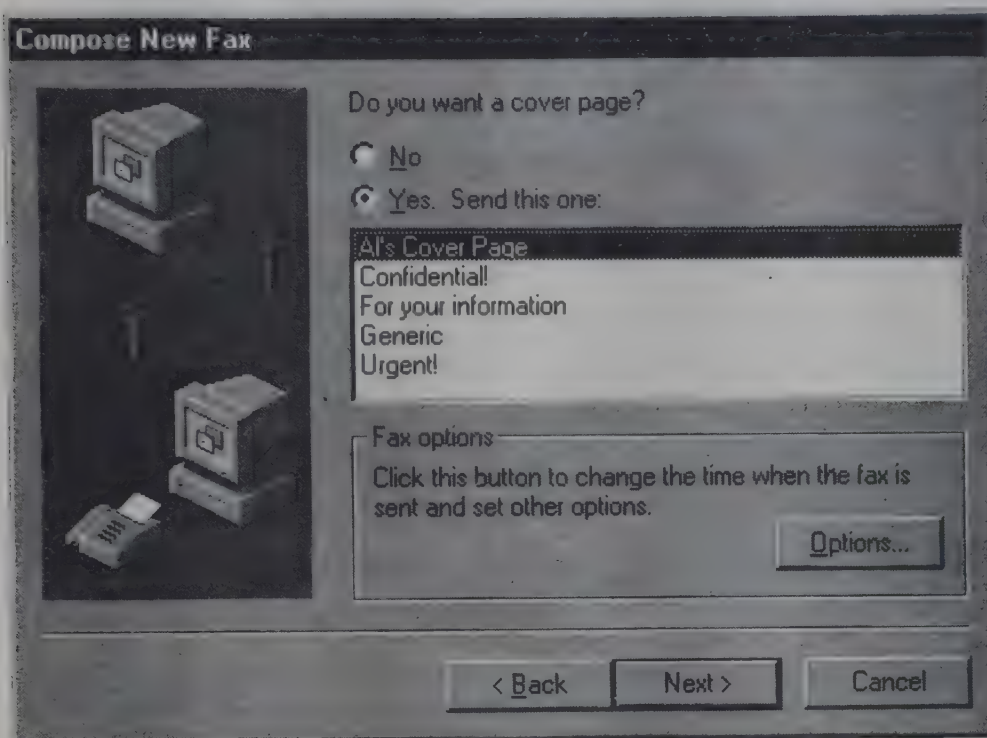


Figure 10.24 Fax options.

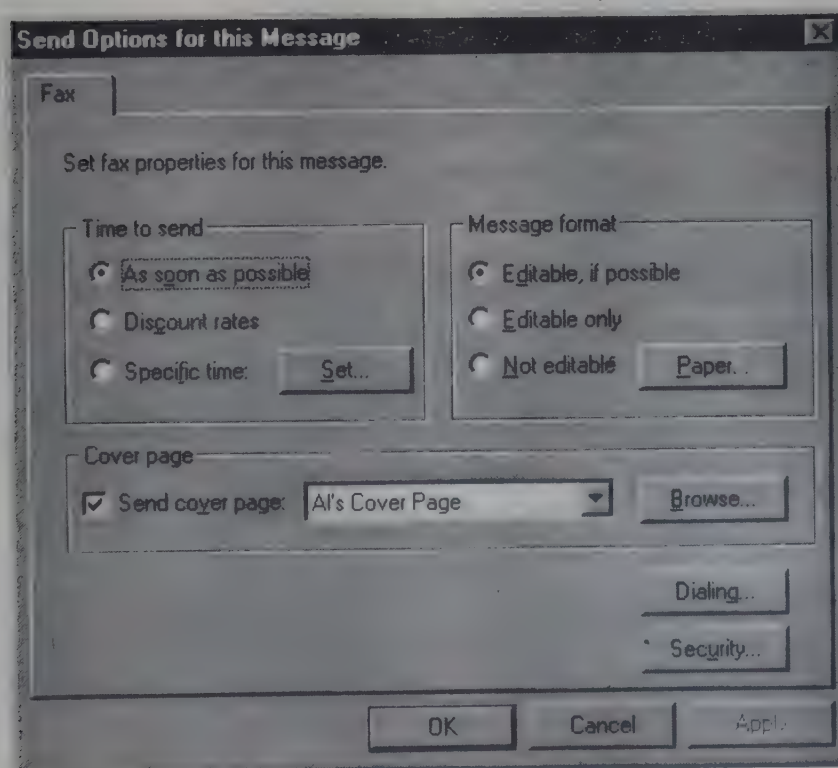


Figure 10.25 Send Options.

You can queue faxes to be sent at specific times, during the times when discount rates are in effect, or right away. The message format options are for sending faxes to recipients who are running Microsoft Fax. An editable message is sent in text format rather than as a fax image to such recipients.

You get another chance to select a cover page in this dialog box. The **Browse** button lets you browse for a cover page in case you have stored them in locations other than where the standard ones are stored.

The **Dialing** button allows you to configure dialing options. The **Security** button lets you specify how to encrypt messages and send public-key encrypted signatures.

Click **OK** when the options are correct. Then click **Next** to move to the next screen in the Compose New Fax wizard, shown in Figure 10.26.

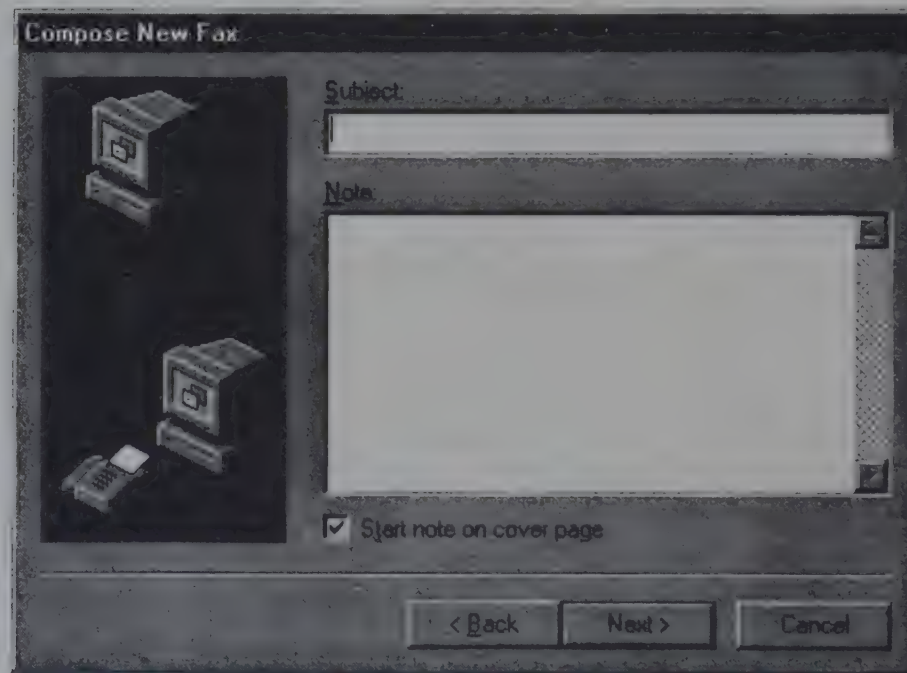


Figure 10.26 Composing the fax.

You can type a subject and a note. In many cases, the note constitutes the body of the fax. The checkbox control is not included on the screen if you chose not to send a cover page. The subject does not accompany the fax if you do not send a cover page.

Click **Next** to display the next screen of the wizard, shown in Figure 10.27. In this dialog box, you can specify files to send along with the fax. The **Add File** button opens an Open dialog box that lets you browse for and find a file to add to the list. The file should be one that can be faxed, which means that it should have been created with an application that prints.

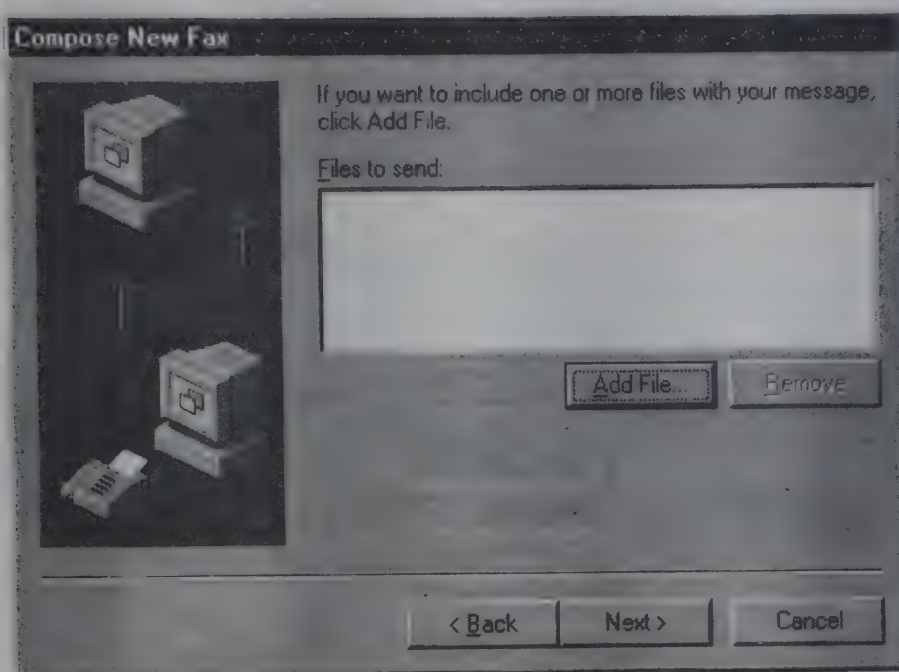


Figure 10.27 Specifying a file to send.

Click **Next** when you are finished adding files. The wizard displays the screen shown in Figure 10.28.

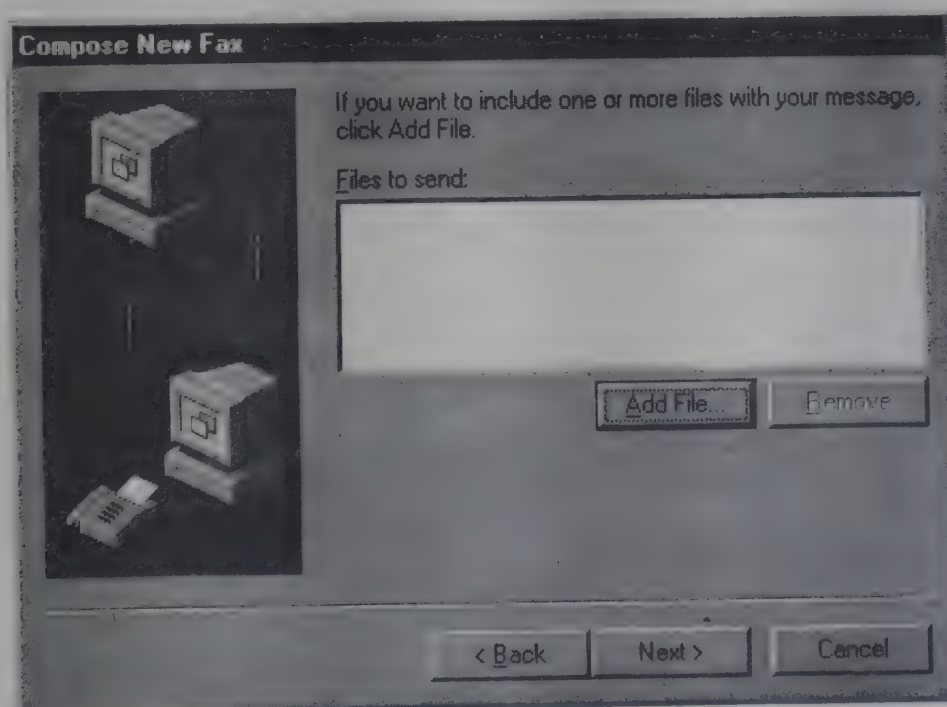


Figure 10.28 Ready to send the fax.

Click **Finish** to send the fax. The Microsoft Fax Status dialog box shown in Figure 10.29 opens and displays the status as the fax is prepared, the remote fax is dialed and connected, and the fax is transmitted.

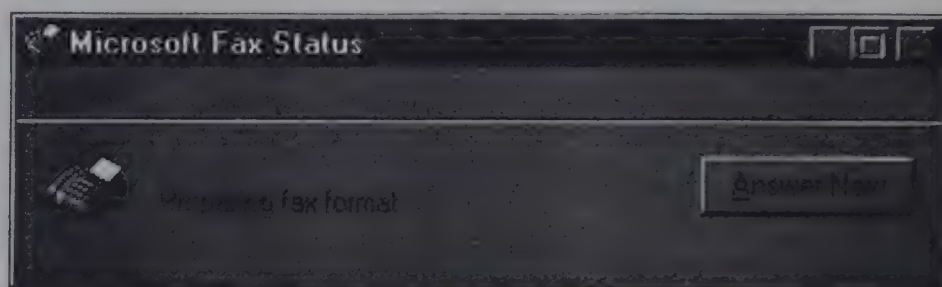


Figure 10.29 Sending the fax.

When the transmission is finished, the Microsoft Fax Status dialog box closes.

Receiving Faxes

To receive faxes, you must run Microsoft Exchange, which is represented by an **Inbox** icon on the desktop. Double-click the **Inbox** icon. The Microsoft Exchange application window opens its Inbox, and a fax icon appears on the Taskbar next to the time of day indicator.

Incoming faxes are posted in Microsoft Exchange's Inbox. We'll look at the Inbox later. First we must condition Microsoft Fax to receive faxes. Click the **fax** icon on the taskbar. This action reopens the Microsoft Fax Status window shown in Figure 10.29, except that the status is labeled "Idle."

There are two ways to receive faxes. Which way you choose depends on your telephone line setup.

Manual Answer

If you have only one telephone line and you use it for voice and faxes, you can use Microsoft Fax's default options. When your phone rings, answer it. If it's a normal call, you'll hear the caller's voice and you can proceed with your conversation. If it's an incoming fax, you'll hear beeps, hisses, or whatever noise your fax/modem makes when a fax is being called in. Click **Answer Now** in the Microsoft Fax Status dialog box and hang up the phone. The fax is received. When the transmission is finished, the Microsoft Fax Status dialog box closes. The fax icon remains on the taskbar, and an envelope icon appears next to it, indicating that the Inbox has something in it.

Automatic Answer

If you have a phone line dedicated to your fax/modem, you can set it up so that Microsoft Fax automatically answers the phone and receives the fax. Click the **fax** icon on the taskbar to open the Microsoft Fax Status dialog box. From the Options menu, choose the **Modem Properties** command to open the Fax Modem Properties dialog box shown in Figure 10.30.

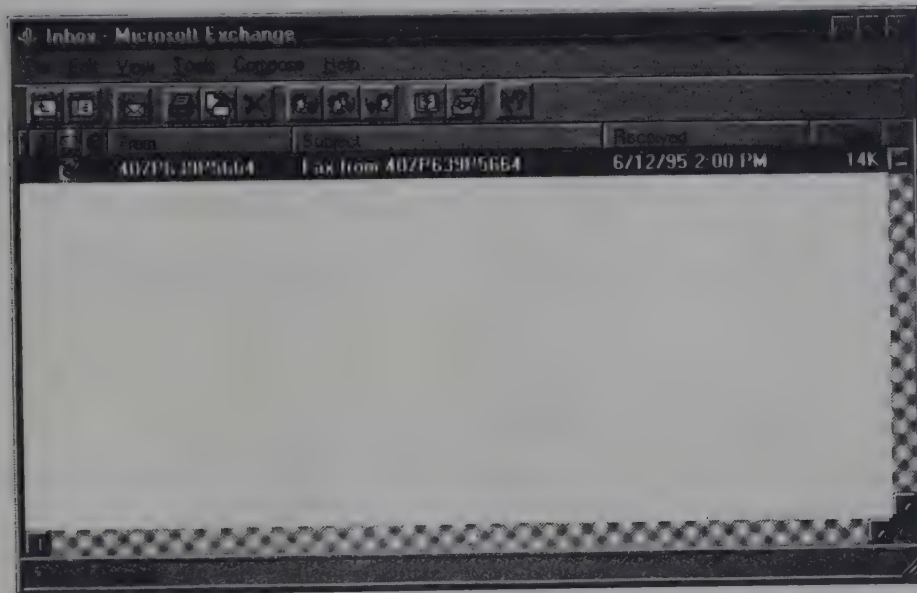


Figure 10.30 The Fax Modem Properties dialog box.

Click the **Answer after** radio button and set the **rings** drop-down list box to the number of rings you want. This is an automatic answer feature, so you might as well set it to answer after the minimum number of rings, which is 2. Click **OK**. The Fax Modem Properties dialog box closes, and the status label on the Microsoft Fax Status dialog box changes to Auto Answer. You can close or minimize the Microsoft Fax Status dialog box or leave it open. Faxes are received and posted to the Inbox. For best results, leave Microsoft Fax set to automatic answer only if you will not be using other applications that use your computer's modem.

Viewing Faxes

When a fax has been received, open the Inbox. Figure 10.31 shows the Inbox with a fax to be read.

To read the fax, select it and press **Enter** or double-click it to open the Fax Viewer with the fax displayed. Figure 10.32 shows the Fax Viewer with a sheet of music that has been faxed to me.

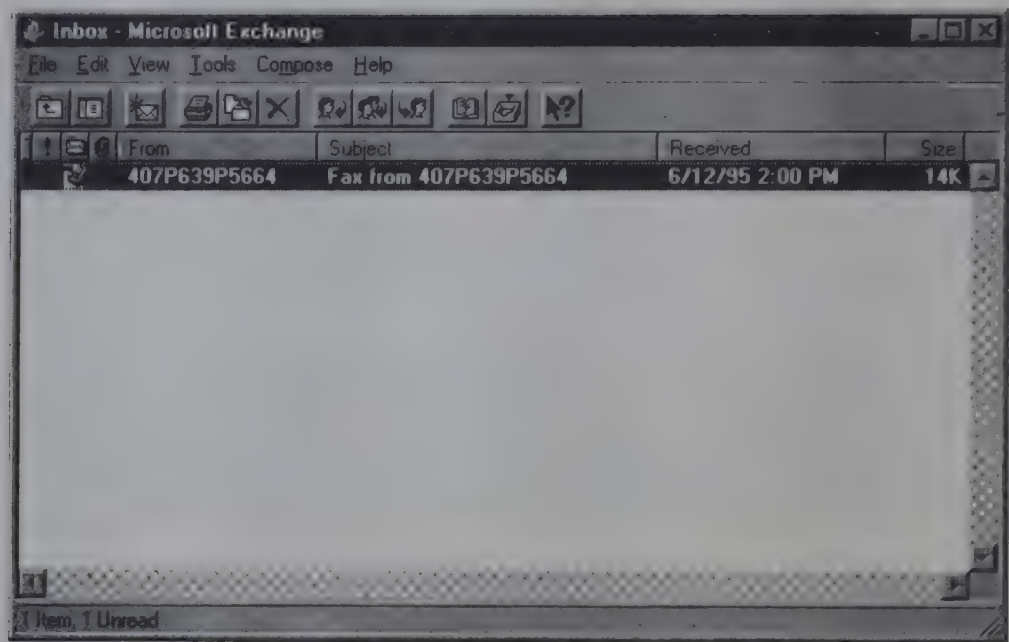


Figure 10.31 The Inbox with a fax.

You can rotate the fax, move it around in the Fax Viewer application's work space, zoom in on the fax, invert its image, save it to a file, and print it.

To view a previously saved fax in Fax Viewer, double-click its icon where you saved it.

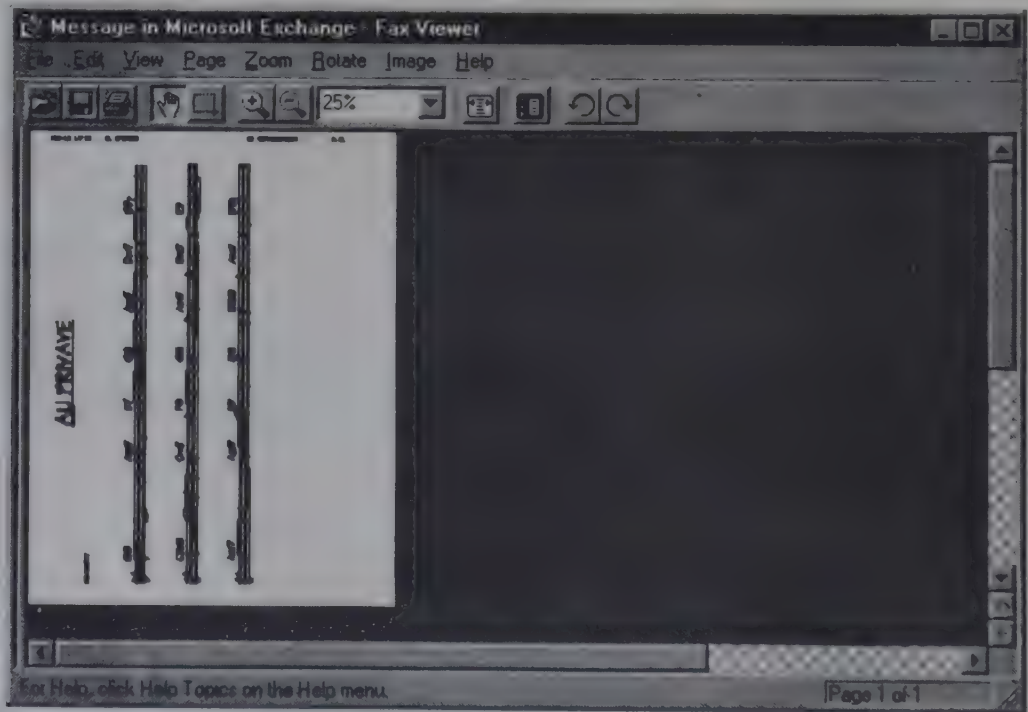


Figure 10.32 Fax Viewer.

Saving Faxes

To save a fax, choose **Save As** in the Fax Viewer's File menu. This action opens a Save As dialog box. You can also drag the fax from the Inbox into a folder or onto the desktop.

Sharing Your Fax/Modem

If you are on a network, you can share your fax/modem with other people. Double-click the **Mail and Fax** icon on the Control Panel to open the Microsoft Exchange Settings Properties dialog box shown in Figure 10.33.

With the **Services** page selected, select the **Microsoft Fax** entry in the list and click the **Properties** button to open the Microsoft Fax Properties dialog box. Select the **Modem** page and check the checkbox above the **Share name** control. Figure 10.34 shows this configuration.

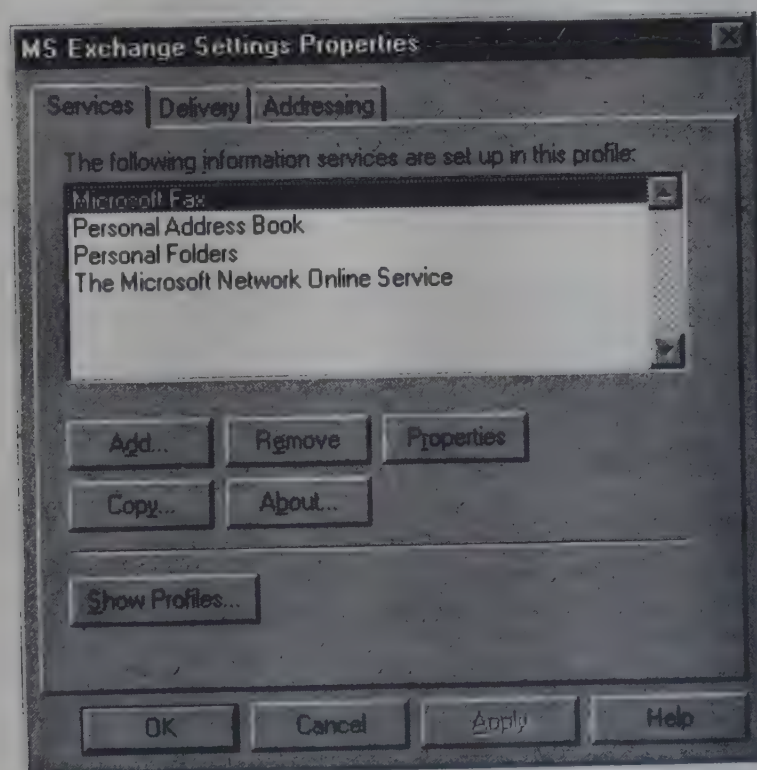


Figure 10.33 The Microsoft Exchange Settings Properties dialog box.

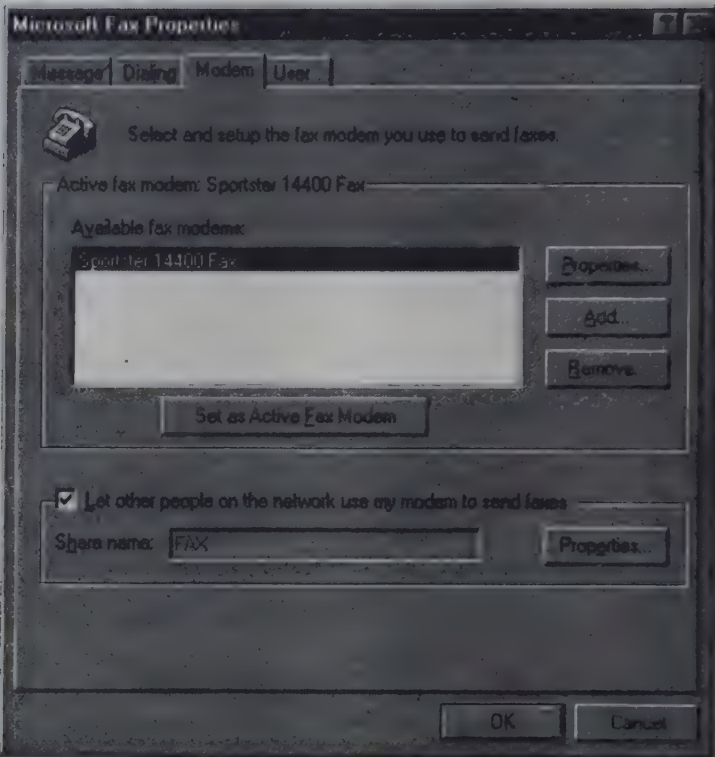


Figure 10.34 Sharing a fax/modem.

Click the **Properties** button to open the dialog box shown in Figure 10.35.

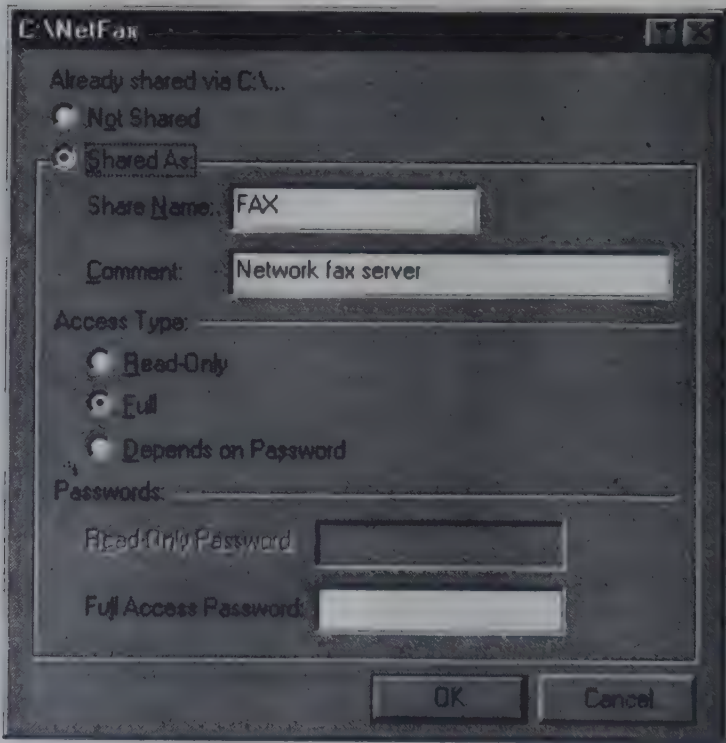


Figure 10.35 Fax sharing dialog box.

Select **Shared As**. You can specify a different **Share Name** and enter a comment. Choose the **Access Type** radio button that reflects how you want to share your fax/modem. **Read-Only** means that other users can receive faxes only. **Full** means that they can send and receive faxes. **Depends on Password** means that users can use either service if they know the password that you assign to the service they want to use.

Make note of the subdirectory specification in the dialog box's title bar, the **Share** name you gave the fax/modem in Figure 10.34, and both passwords if you assigned them. Other people need this information to share your fax/modem.

Using a Remote Fax/Modem

When you install Microsoft Fax, it installs Microsoft Exchange, which asks you to specify the fax/modem device to use in sending and receiving faxes. At that time you can specify a shared network fax/modem. To do so, you must know the name of the computer that owns it and the name of the fax/modem. If access to the fax/modem is protected by passwords, you must know them, too.

Chapter 12 explains the procedures for installing Microsoft Exchange.



CHAPTER 11

Networks

A network consists of computers that are connected so that they can share resources—files, CD-ROM drives, printers, faxes, and electronic mail. Windows 95 incorporates several layers of network support. You can connect Windows 95 machines to one another and to machines running Windows for Workgroups, Windows NT, Novell NetWare, and several other commercial networks.

This chapter explains how to configure and use Windows 95 in a network where all the machines run Windows 95. The procedures are typical of installing and using Windows 95 in most network environments. You will learn about:

- Adding network support
- Mapping a network drive
- The Network Neighborhood
- Network administration

ADDING NETWORK SUPPORT

If you installed Windows 95 on top of a Windows for Workgroups installation, network support may already be installed. To find out, you can proceed to the discussion on the Network Neighborhood. If the network is not running properly, return here to address installation issues.

Getting a network to work the first time is a daunting task. You must install a network adapter card in at least two computers. The adapters must have hardware settings that do not conflict with other hardware in the computers. You must install network software in both computers with options set to match the hardware. The connecting cables must be reliable—no shorts and no open ground or signal circuits—and properly connected and terminated. Finally, the operating systems in the two computers must be configured to reflect how their resources are to be shared. I assume that you have installed the adapters, that they do not conflict with other hardware, and that the cabling is correct. If you are unsure about these matters, get help from your hardware vendor.

Network cards are well-known for their difficulty in configuration and setup. If you haven't already bought a network card, you would probably be happiest to look at the models Windows 95 supports directly. This is one case where plug-and-play is a very valuable option, capable of sparing you hours of configuration headaches.

New PCs sold today with Windows 95 installed are able to make use of new NDIS 4.0 network interface cards. Although this feature is not yet available for older-model systems, keep your eye on Microsoft's Web site.

Preparing for Setup

Know the manufacturer and model of your network adapters—you must tell Windows 95 which adapters you have. If the adapters have hardware configuration settings, make a note of them. Typical settings involve IRQ assignment, DMA channel, buffer memory address, and I/O port address. Windows 95's network installation procedures know which of these settings they need and ask you to specify them. In many cases, the system can sense how the hardware is configured, and it begins with these settings as a default. In other cases, the system cannot sense the settings or senses them incorrectly.

Running Setup

There are a couple of ways you can proceed. You can double-click the Control Panels' **Add New Hardware** icon and let Windows 95 try to automatically detect

and install your network adapter. In most cases, this procedure is successful, and the most that you have to do is specify one or more of the hardware configuration settings.

Another approach is to double-click the Control Panel's **Network** icon and add the adapter from the Network dialog box. This is the fastest way to go if you know what kind of network adapter you have. Double-click the **Network** icon to open the Network dialog box shown in Figure 11.1.

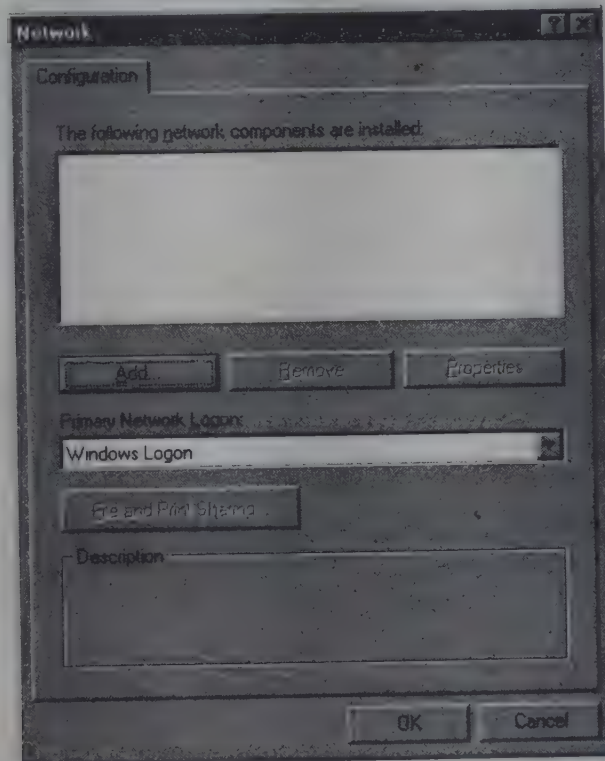


Figure 11.1 The Network dialog box.

Click the **Add** button in the Network dialog box to open the Select Network Component Type dialog box shown in Figure 11.2.

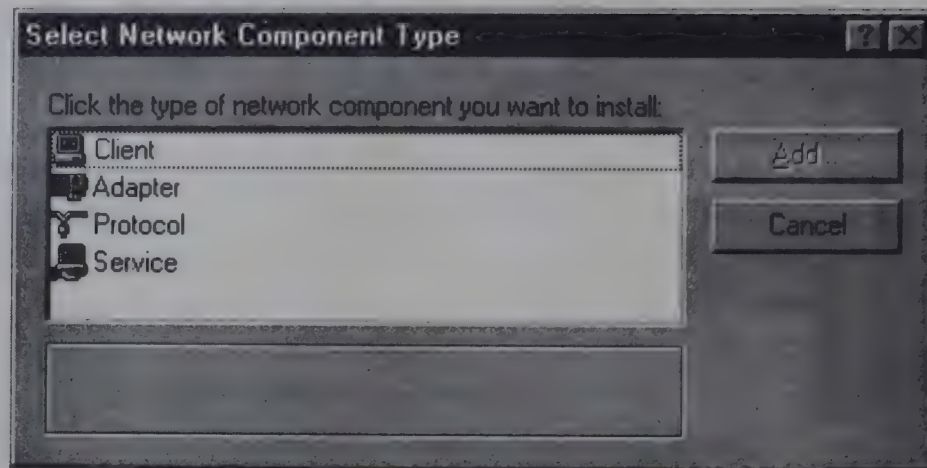


Figure 11.2 Select Network Component Type dialog box.

Select the **Adapter** entry in the list and click **Add** to open the Select Network Adapters dialog box shown in Figure 11.3.

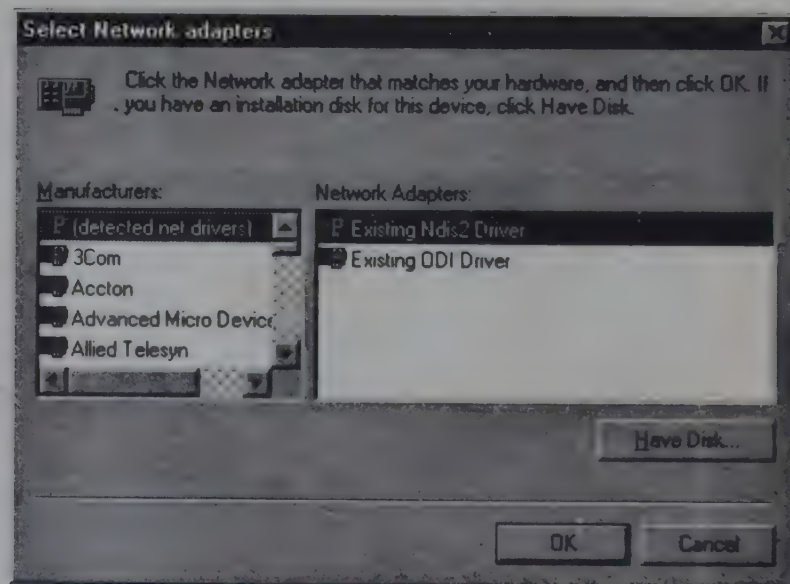


Figure 11.3 Select Network Adapters dialog box.

Select the manufacturer and network adapter from the lists and click **OK**. In our examples, we'll install the Novell/Anthem NE2000 adapter, a generic adapter with which many other adapters are compatible. The Network dialog box returns with the entries added, as shown in Figure 11.4.

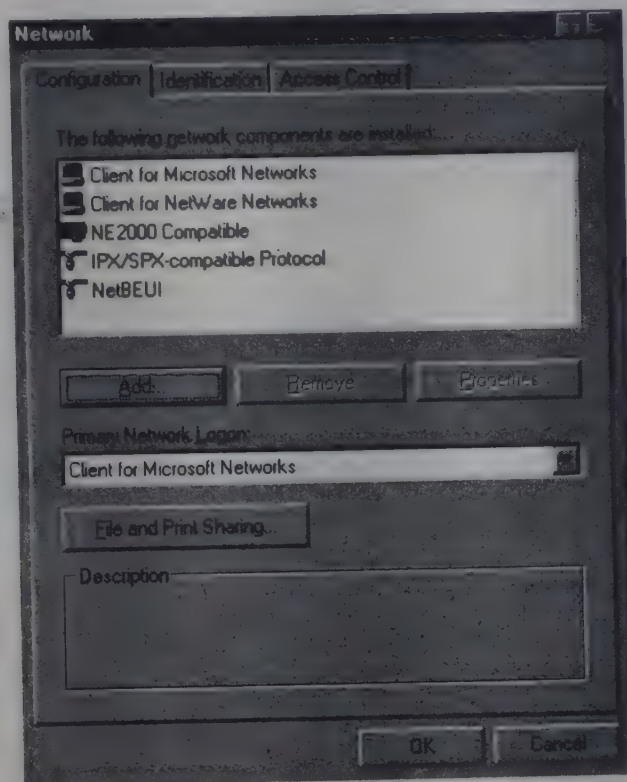


Figure 11.4 Network adapter added.

The **Client for NetWare Networks** entry is in the list, but you might not need it. If there are no NetWare servers in your network, select that entry and click the **Remove** button to remove the entry.

Sharing Files and Printers with Windows for Workgroups and Windows NT

If there are computers in the network running Windows for Workgroups or Windows NT and if those computers share your files and printers, continue with this procedure. Otherwise proceed to the section titled "The Network So Far," later in this chapter.

Click **Add** to open the Select Network Component Type dialog box shown in Figure 11.5.

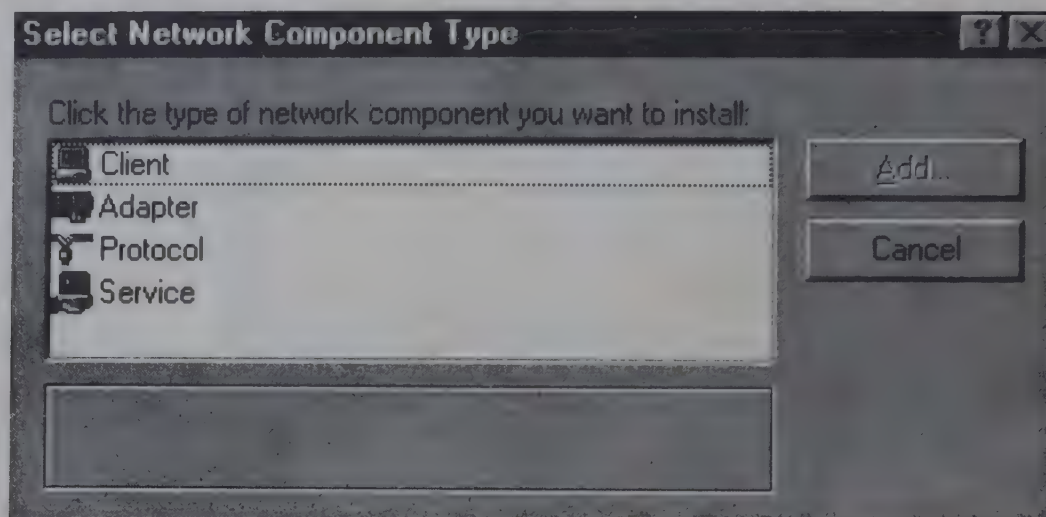


Figure 11.5 Select Network Component Type dialog box.

Select the **Service** entry and click **Add** to open the Select Network Service dialog box shown in Figure 11.6.

In Figure 11.6, I've selected the **Microsoft** entry from the **Manufacturer** list and the first of two services. Click **OK**, and the Network dialog box returns with the entries added, as shown in Figure 11.7.

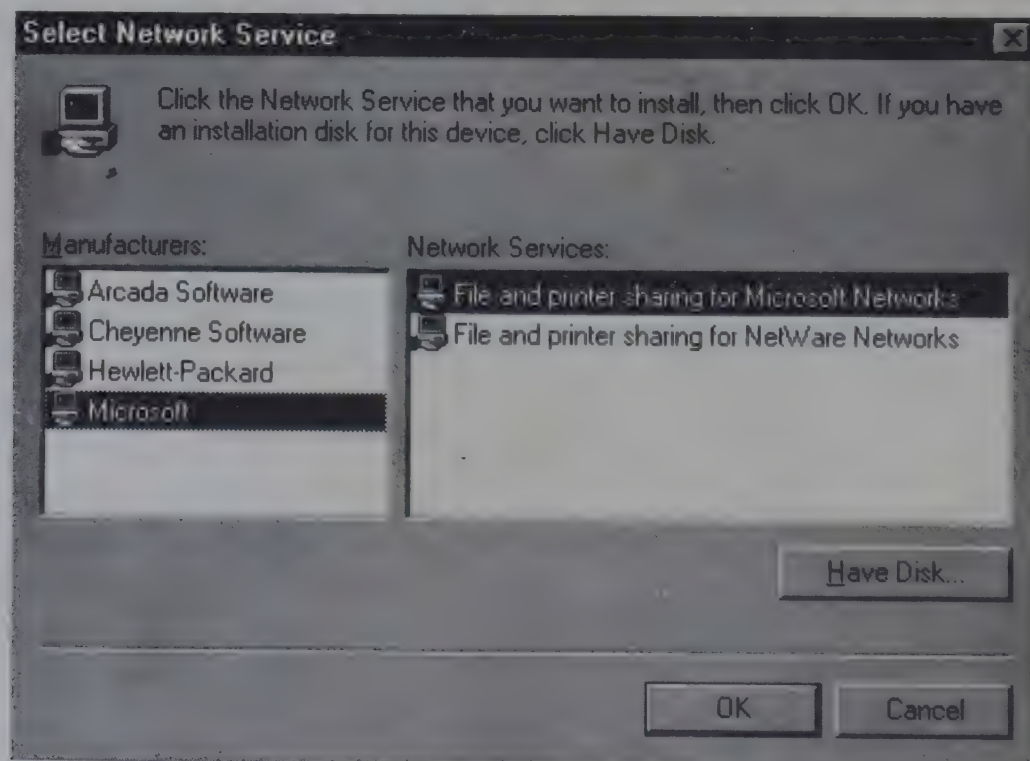


Figure 11.6 Select Network Service dialog box.

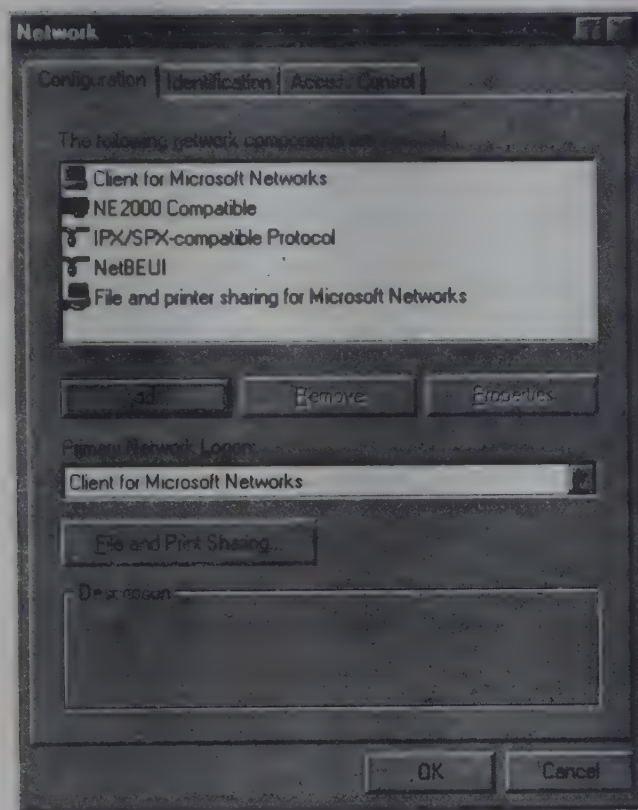


Figure 11.7 Service added.

The Network So Far

Let's review what you have installed and configure each installed item. If you are sharing resources with Windows for Workgroups and Windows NT users, look at Figure 11.7. Otherwise, look at Figure 11.4.

Clients

The **Client for Microsoft Networks** entry permits you to log on to other Microsoft Network computers—Windows 95, Windows for Workgroups, Windows NT—and use their shared resources. Select this entry and click the **Properties** button to open the Client for Microsoft Networks Properties dialog box shown in Figure 11.8.

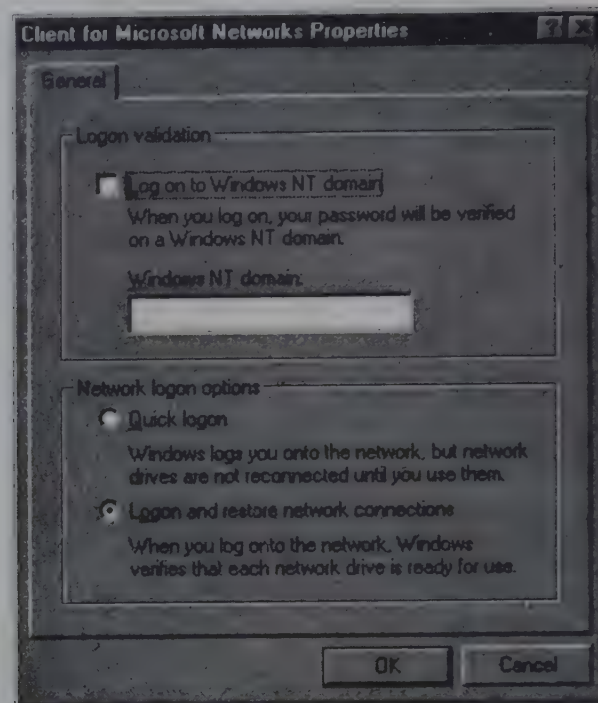


Figure 11.8 Client for Microsoft Networks Properties dialog box.

The **Logon validation** controls have to do with logging on to a Windows NT server. If you need to do that, see the person in charge of the server for the information to complete these controls.

The **Network logon options** determine whether Windows 95 tries immediately upon logon to connect to network drives that were connected the last time you were logged on to the network. The **Quick logon** selection waits until you try to use a network drive to make the connection. This option saves you logon time in case other users don't leave their computers running and is especially useful if you are using a laptop. The second option is the default. It tries to connect every network drive when you log on. If Windows 95 cannot find some drives you must respond to an error message for each one.

Click OK to return to the Network dialog box.

Adapters

The **NE2000 Compatible** entry specifies the network adapter installed in this computer. You're not finished with that entry.

Maybe the procedure has correctly installed your network adapter and maybe it has not. Select the **NE2000 Compatible** entry in the Network dialog box and click **Properties** to open the Properties dialog box shown in Figure

11.9. The title, and perhaps some of the contents of the dialog box, depends on the network adapter installed in your system.

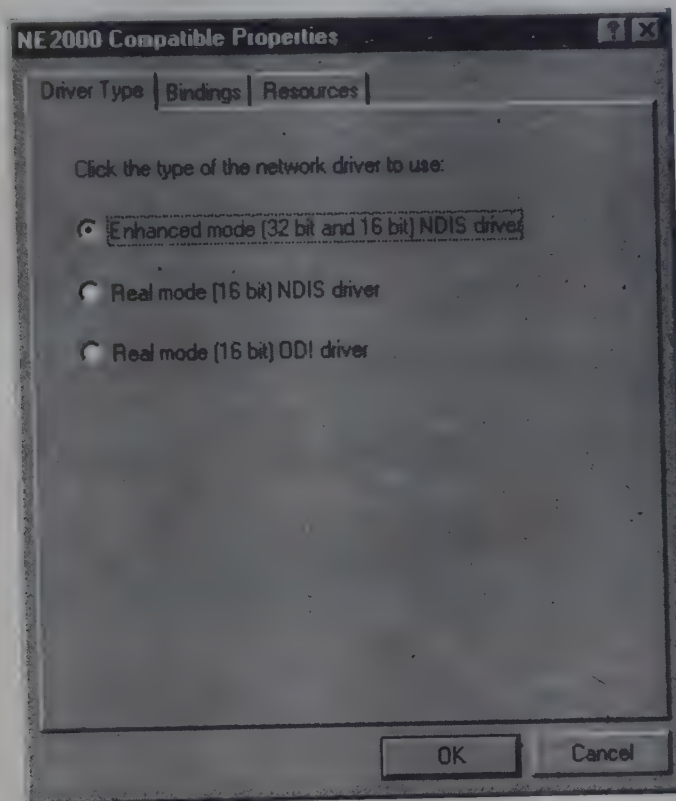


Figure 11.9 Network adapter Properties dialog box.

Open the **Bindings** page shown in Figure 11.10.

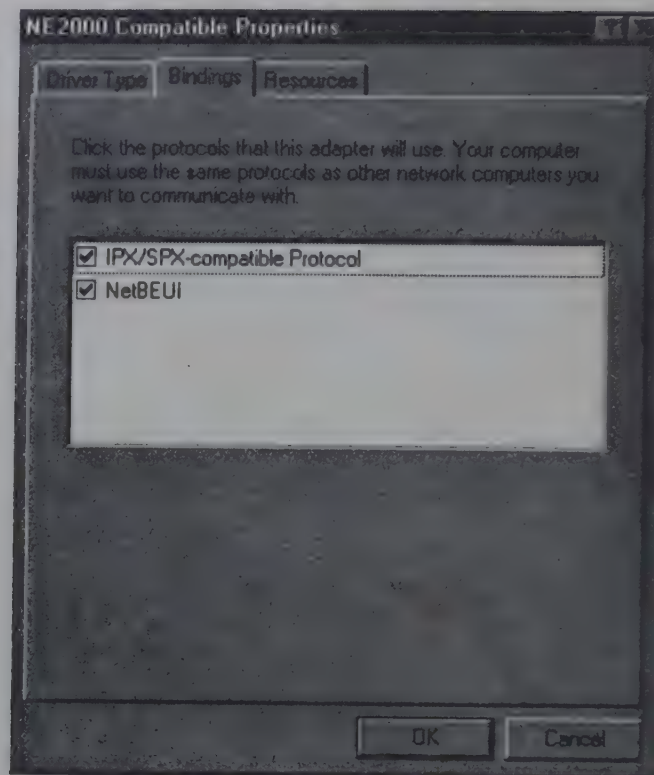


Figure 11.10 The Bindings page.

The **Bindings** page specifies which protocols are bound to an adapter. Usually all protocols are bound to the only adapter in a computer. Sometimes, however, a computer has two or more adapters because it is connected to several computers and not all of them have the same connecting architecture. In this case, you would bind each protocol only to the adapter that the protocol supports.

Click the **Resources** tab to open the **Resources** page shown in Figure 11.11.

Here is where the automatic procedure fails most often. In the case of the NE2000-compatible adapter in my machine, the system cannot figure out the IRQ or the I/O address range. I have to set these values manually. How do I do it? Remember that I told you earlier to make a note of these values. How do you know what they are? Sometimes you have to find an expert and ask. Usually the documentation that comes with the adapter tells you what the factory defaults are and how to change the values. In my case, the IRQ should be 10 and the I/O address range should be 300–31F. (The asterisks in the settings in Figure 11.11 indicate that the current settings, 3 and 200-21F, conflict with other hardware in the PC and must be changed. If any corrections are required, make them and click **OK**.)

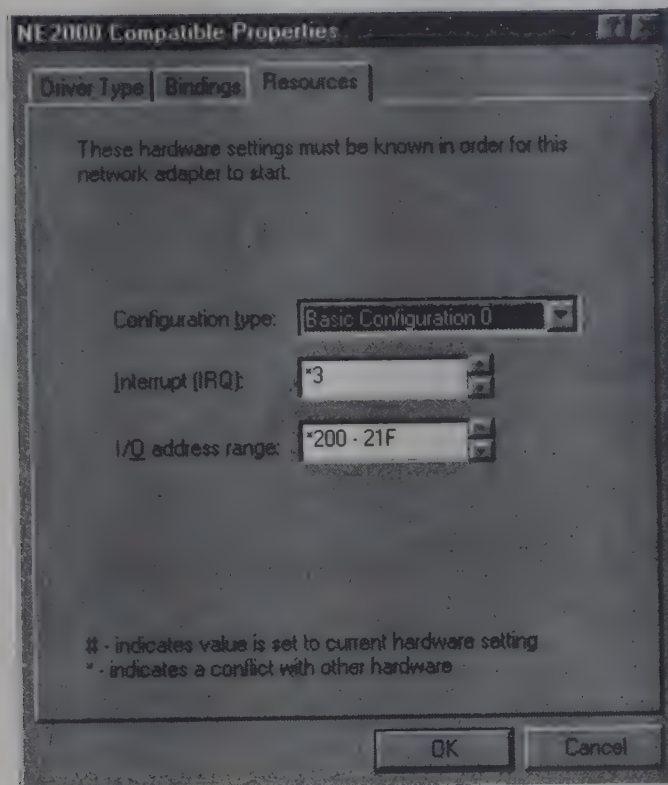


Figure 11.11 The Resources page.

PROTOCOLS

The **IPX/SPX** and **NetBEUI** entries in the Network dialog box specify *protocols*—the languages that computers use to communicate with one another. You need the NetBEUI protocol. You might not need the IPX/SPX-compatible protocol. If you do not want to use the direct-cable connection discussed in Chapter 14, you probably do not need the second protocol. We'll leave the protocol in for now to facilitate that discussion. You can remove the protocol by selecting the entry and clicking **Remove**. Be aware, however, that some multiplayer games and NetWare utility programs use this protocol.

Each protocol has properties that you can set. We'll look at the NetBEUI properties as an example. Select that protocol in the Network dialog box and click **Properties** to open the NetBEUI Properties dialog box shown in Figure 11.12.

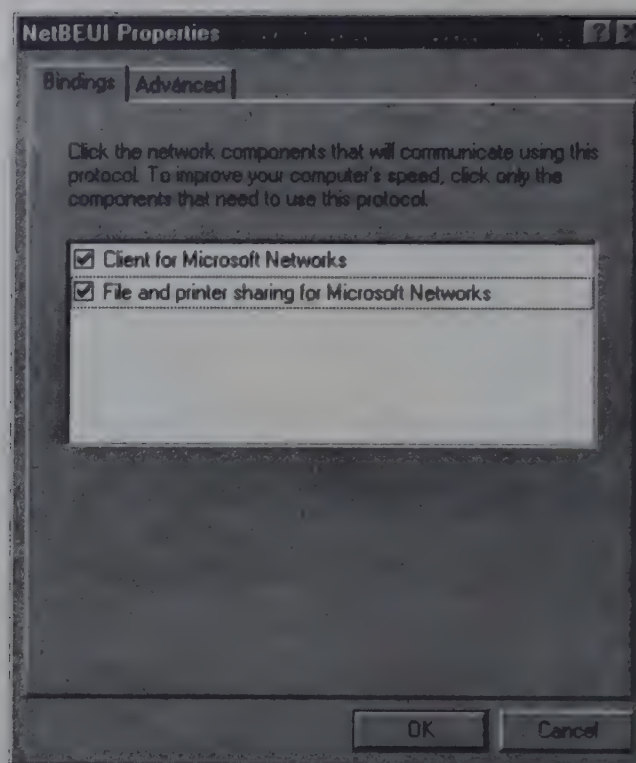


Figure 11.12 The NetBEUI Properties dialog box.

Make sure that all listed network components are bound to the protocol by checking the checkboxes; then click **OK**. Don't worry about the **Advanced** page. Its default settings are adequate.

Services

The last entry in Figure 11.7 permits you to share your files and printers with users on the network who are running Windows for Workgroups or Windows NT. This entry doesn't actually assign resources to be shared. It only installs the necessary services that Windows 95 needs to share resources.

SHARING RESOURCES

You learned how to share your printers and fax/modem in Chapter 10. Now you'll learn how to share disks and files.

Click the **File and Print Sharing** button on the Network dialog box to open the File and Print Sharing dialog box shown in Figure 11.13.

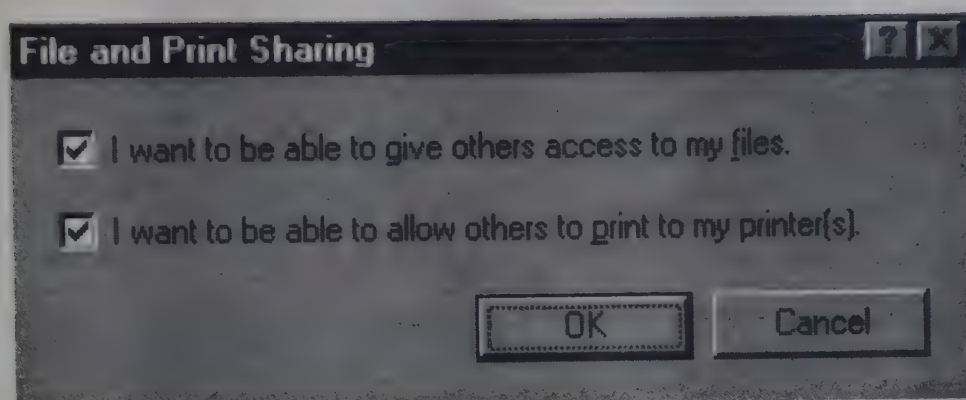


Figure 11.13 File and Print Sharing dialog box.

Set the checkboxes according to your needs. Merely saying that you want to share files and printers is not enough; however, you also have to specify sharing privileges to those components on your computer that you are willing to share. You might want to assign passwords or specify that only specific users on the network can have access to your files or can print on your printer.

Click the **Access Control** tab on the Network dialog box to open the **Access Control** page shown in Figure 11.14.

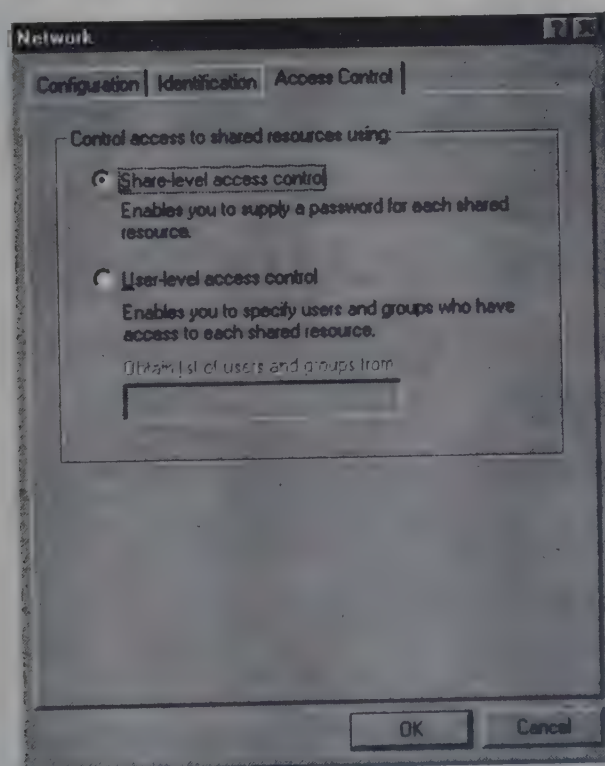


Figure 11.14 The Access Control page.

Use the **Access Control** page to decide whether your shared resources are protected by passwords—**Share-level access control**—or shared with specified users and groups—**User-level access control**. If you specify **User-level access control**, there must be a Windows NT server or domain somewhere on the network to manage the lists of users and groups. We'll ignore that option and stick with passwords.

You are not required to limit access to your resources in one of these ways. You can grant free access without specifying passwords or users or groups. We'll see how soon. Click **OK** when you have made your choice.

You can share files at several levels. You can share everything on a disk drive or everything in specified folders (subdirectories). Identifying what you share works the same way in either case and can be done from My Computer or from the Explorer.

In these exercises we'll share a disk drive and a subdirectory from a disk drive.

Sharing a Disk Drive

Double-click the **My Computer** icon on the desktop to open the My Computer folder shown here in Figure 11.15.

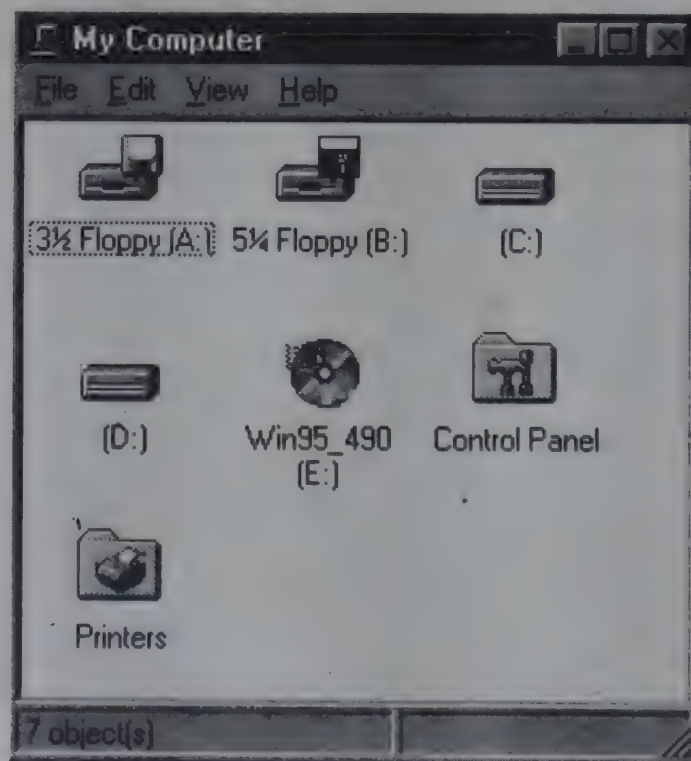


Figure 11.15 My Computer.

In this exercise, you'll share a CD-ROM drive; the same procedure applies if you want to share a hard drive.

Right-click the **CD-ROM** icon and choose **Sharing** on the right-click menu. The drive's Properties dialog box opens to its Sharing page. Choose the **Shared As** radio button. The resulting **Sharing** page is shown in Figure 11.16.

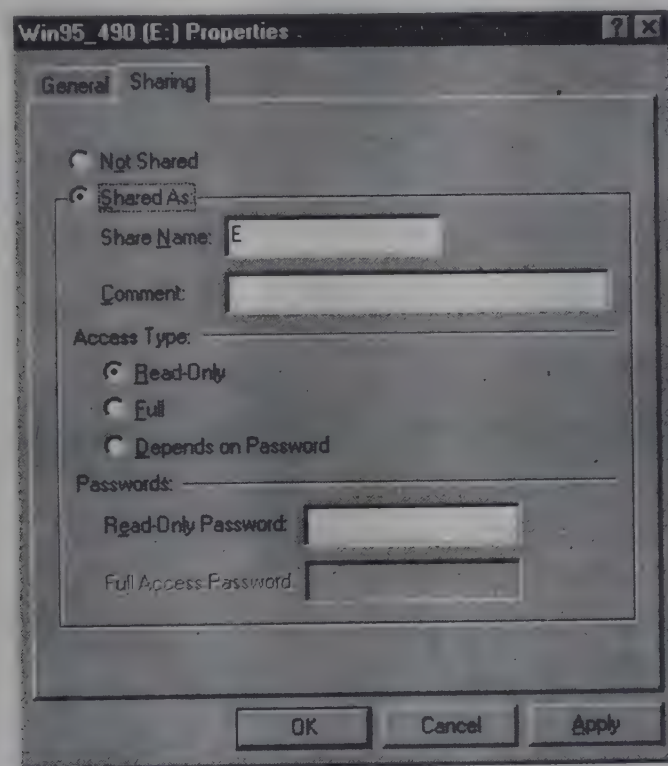


Figure 11.16 The CD-ROM drive Sharing page.

Windows 95 has assigned the share name **E**, which is the CD-ROM drive's drive letter. You can change the name if you wish. The comment field is for your use.

There is no reason to change the access type, because a CD-ROM drive is a read-only medium. You could change the access type, but anyone who tried to write to the device would get an error message.

Enter a password in the **Read-Only Password** control, and remember that password for the next section. A dialog box opens so that you can verify the password that you entered. Click **OK**, and My Computer's CD-ROM icon changes to one being held out in a hand. This representation shows that the drive is shared. Figure 11.17 shows My Computer with the new icon.

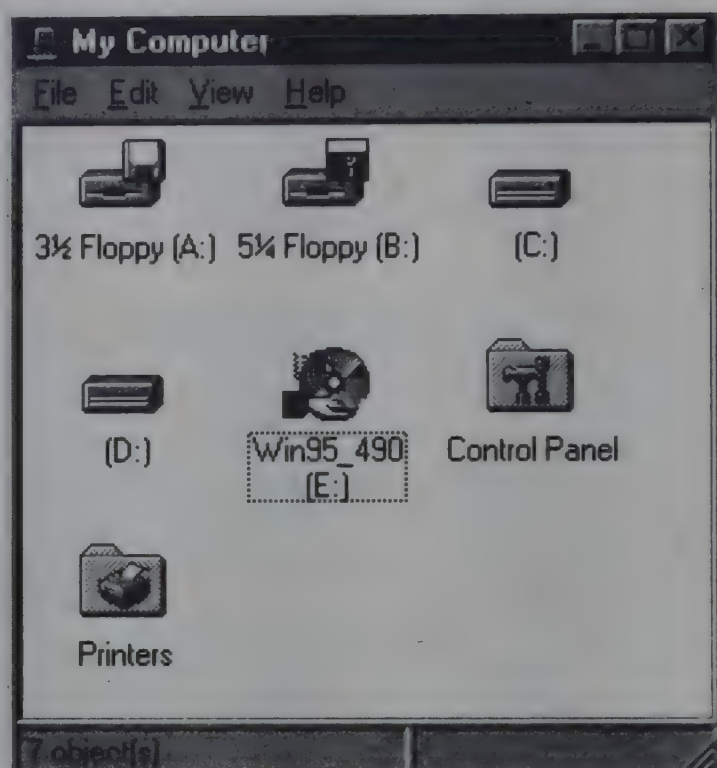


Figure 11.17 The CD-ROM drive being shared.

Sharing Folders

In this exercise you'll share a folder on one of the hard drives. It seldom makes sense to share folders on a removable-media CD-ROM drive because when you change the disk, a different set of folders is installed.

To share folders within a drive, first you open the drive's folder. Double-click the D: drive icon to open its folder. Figure 11.18 shows the D: drive's folder on my computer. Yours would have different folders. You might not even have a D: drive.

Pick a folder to share. I'll share the folder named Morphs on my D: drive. Right-click the folder and click the **Sharing** selection on the right-click menu to open the **Sharing** page of the folder's Properties dialog box. This page looks just like the disk drive Properties/**Sharing** page in Figure 11.16. Click the **Shared As** radio button, observe the name—which is MORPHS in my system—and click the **Full** radio button under **Access Type**. Don't bother with a password this time. Click **OK**. Figure 11.19 shows the D: drive folder's contents changed to indicate that the Morphs folder is shared.

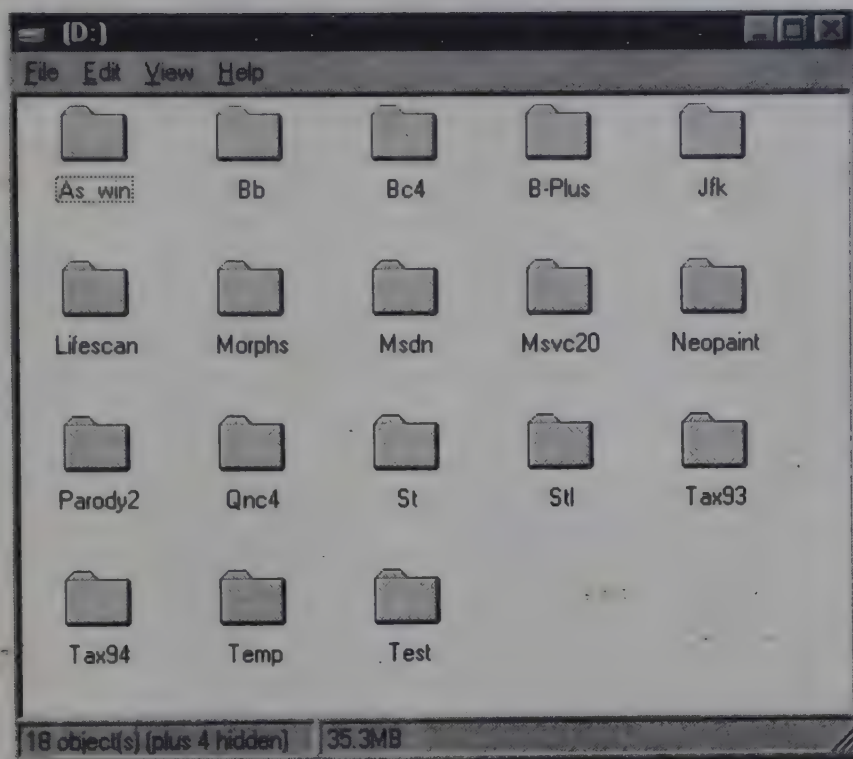


Figure 11.18 The D: drive.

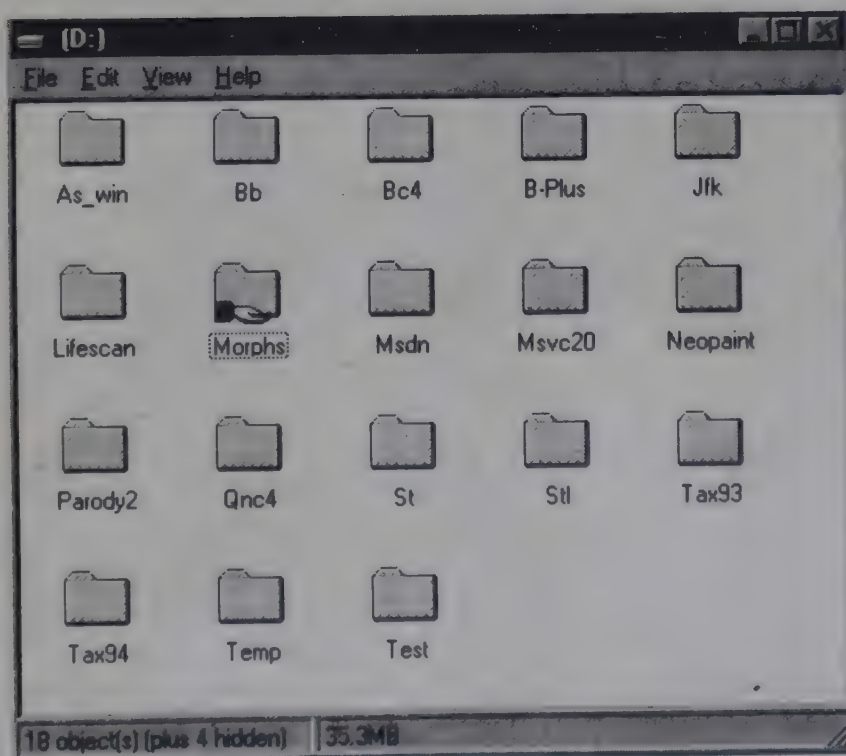


Figure 11.19 A shared folder.

Similarly, you can share a folder on the desktop. You cannot share the desktop itself or the Recycle Bin.

NAMING YOUR COMPUTER

To keep everything straight, you need to give your computer a unique name, one that no other computer in your workgroup uses. Open the Network Properties dialog box (**Properties** on the Network Neighborhood's right-click menu) and select the **Identification** page, as shown in Figure 11.20.

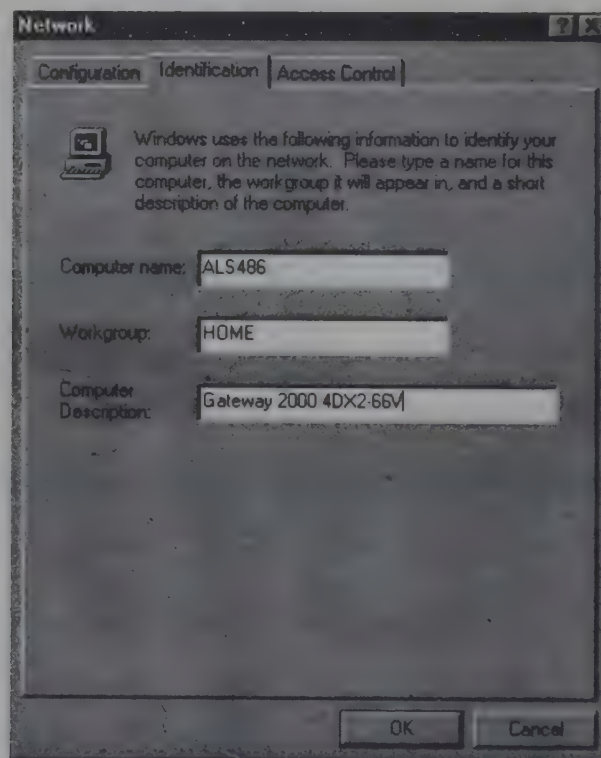


Figure 11.20 Identification page.

Fill in the unique name of your computer, the name of the workgroup in which the computer cooperates, and a description of the computer. These names require coordination between you and the other people in the network.

Computer Names

You can name your computer anything as long as it does not conflict with the name of another computer in the network. Big networks usually employ a network administrator who coordinates such things. Smaller networks can often get by with

the mutual cooperation of the users. If you want to name your computer Beavis, for example, ask around first to make sure that no one has beaten you to it. I've named this computer Als486. There are two other computers here: one named Chicago and another named Toshiba.

Workgroups

Depending on the size of the network and the structure of the organization, you might have several workgroups. Workgroups are typically organized along functional lines within a company—accounting, marketing, inventory, shipping and receiving, management, research and development, quality assurance, human resources, and so on. Each workgroup shares resources common to the functional entity that the workgroup supports. The network shares resources common to everyone, such as electronic mail, fax/modems, and the football pool.

Two of the computers here are in a workgroup named Home. The other is in a workgroup named Road.

ACCESSING NETWORK FILES

For these exercises we move to a different computer in the network to access the disk and files that we shared in the last section. We'll use the computer named Chicago, which is in the same workgroup as the one we've been using to share files. I'll talk to you now as if you were using these computers. Substitute the names you use for the ones in my network.

The Network Neighborhood

At the Chicago computer, double-click on the **Network Neighborhood** icon on the desktop. Figure 11.21 shows the Network Neighborhood folder.

The Network Neighborhood displays an icon that represents the entire network and two computer icons. Remember that there are three computers in my network but that only two of them are in the Home workgroup. The Network Neighborhood initially shows you only the computers in your own workgroup.

To access a shared resource in the Als486 computer, double-click its icon. Figure 11.22 shows the Als486 folder.

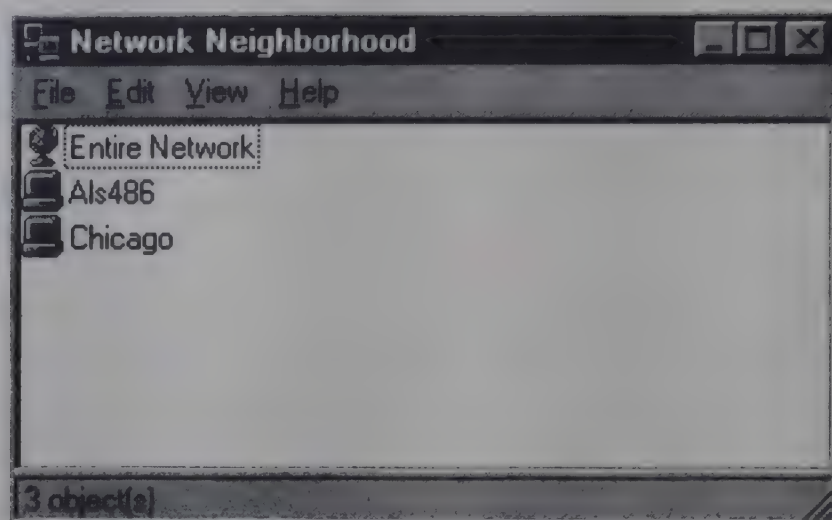


Figure 11.21 Network Neighborhood.

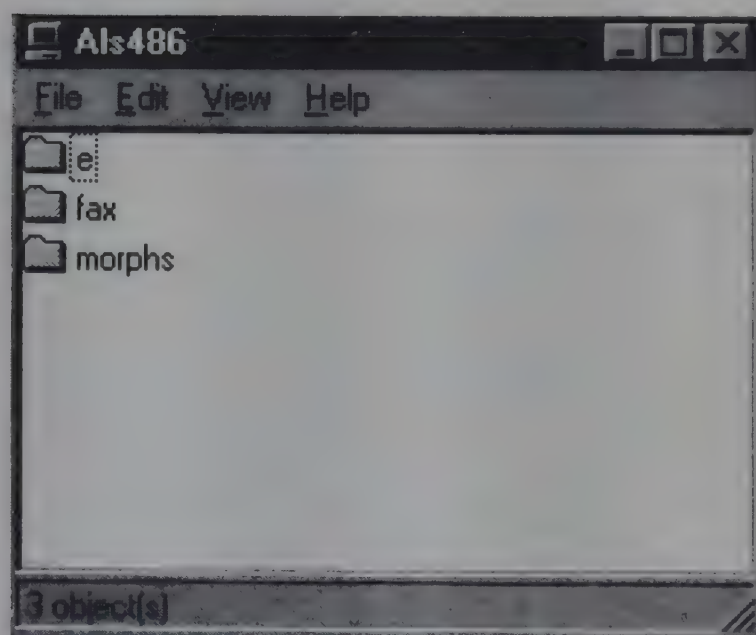


Figure 11.22 The Als486 folder.

There are three shared resources in Als486. The one named **e** is the CD-ROM drive that you shared earlier in this chapter. The fax folder represents the shared fax/modem that you installed in Chapter 10. The shared resource named **morphs** is the folder that you shared earlier in this chapter. You can open and manipulate these resources just as if they existed on your computer.

Double-click the **e** icon in the Als486 folder. The shared CD-ROM access is protected by a password. Accessing it opens the Enter Network Password dialog box shown in Figure 11.23.

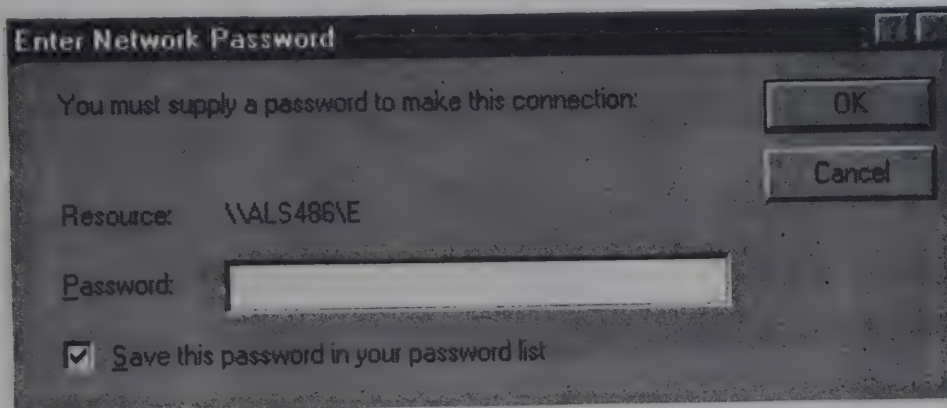


Figure 11.23 The Enter Network Password dialog box.

Enter the correct password and click **OK** to open the shared CD-ROM drive. You may now read and copy files and launch applications from the CD-ROM drive on the other computer.

The Entire Network

Return to the Network Neighborhood dialog box and double-click the **Entire Network** icon to open the Entire Network folder shown in Figure 11.24.

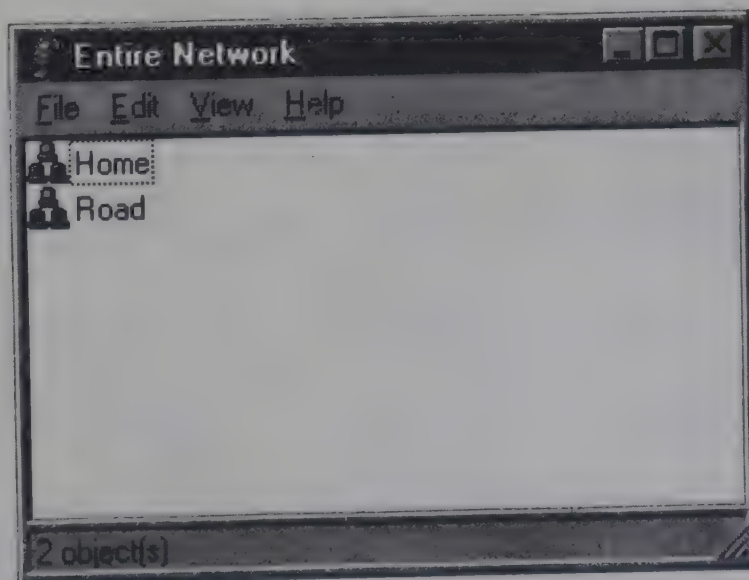


Figure 11.24 The Entire Network folder.

The Entire Network folder contains icons for all the workgroups in the network. If you double-click the **Home** icon, it opens a folder with the Als486 and Chicago computer icons. You don't need to do that because the same information is in the Network Neighborhood through which you traveled to get here.

Double-click the **Road** icon to open the Road workgroup's folder, as shown in Figure 11.25.

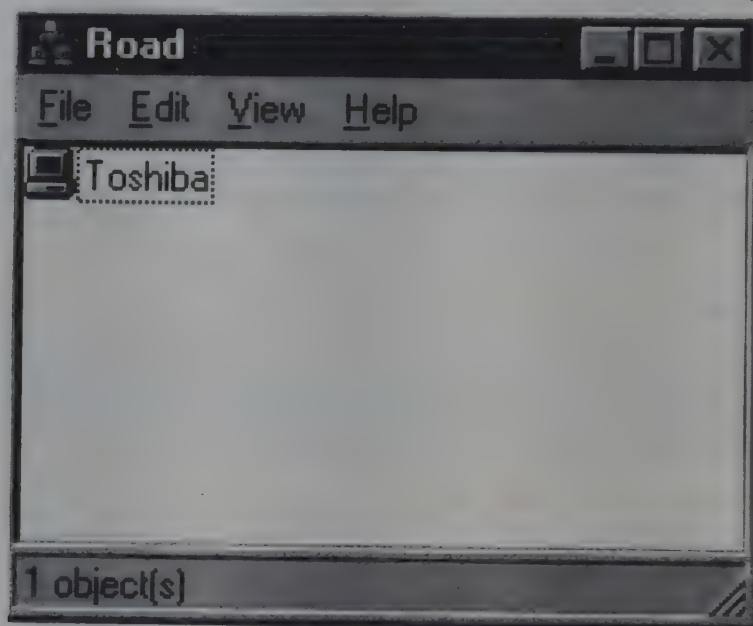


Figure 11.25 Another workgroup.

By double-clicking the **Toshiba** computer's icon, you can access its shared resources, thereby reaching across workgroups.

Accessing Network Files from Applications

Applications can read and write documents from and to shared files on the network. At the Chicago computer, run the Notepad application from the Start/Accessories menu. Type some text into Notepad and choose **Save As** on the File menu. Figure 11.26 shows the Save As dialog box.

Double-click the **Network Neighborhood** icon in the Save As dialog box. This action changes the Save As dialog box to display the contents of the Network Neighborhood, as Figure 11.27 shows.

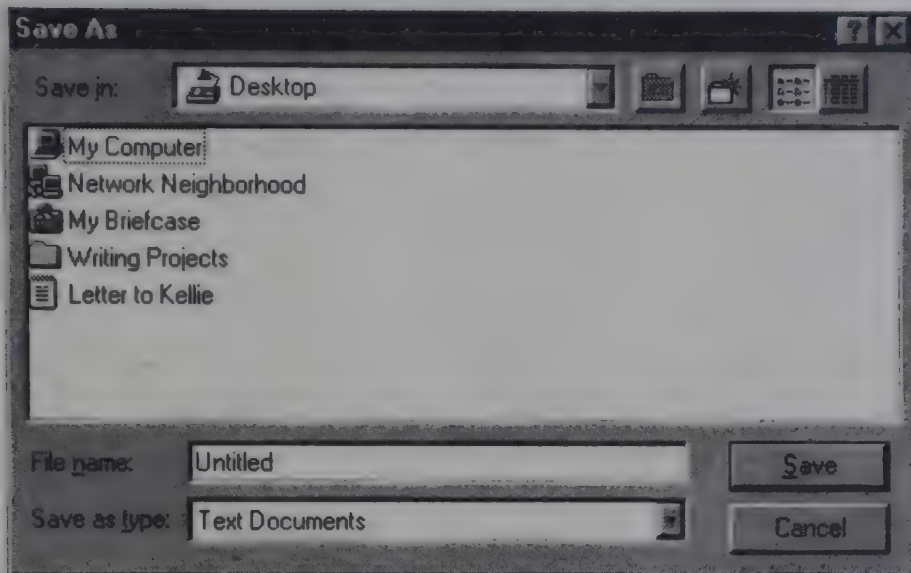


Figure 11.26 The Save As dialog box.

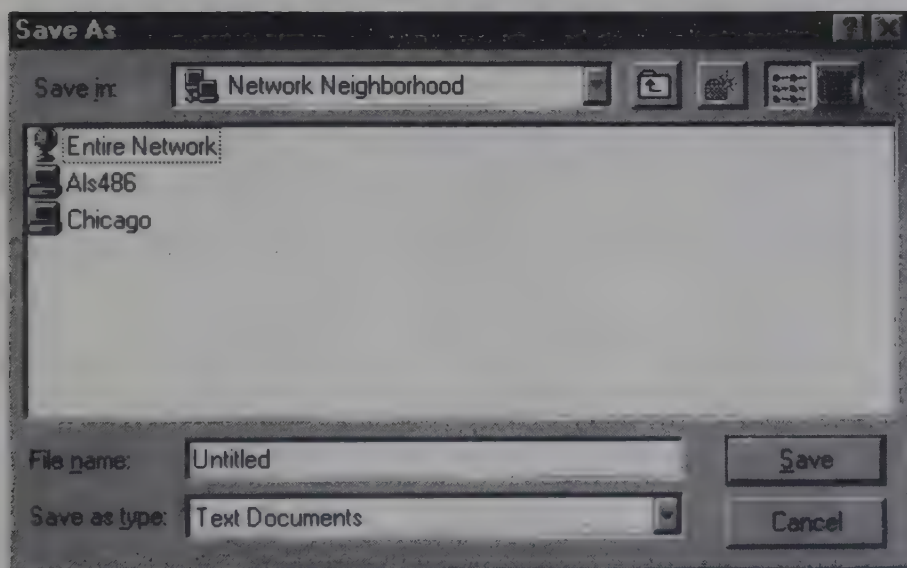


Figure 11.27 Saving to the Network Neighborhood.

Double-click the **Als486** icon in the Save As dialog box. This action changes the Save As dialog box to display the shared resources on Als486, as Figure 11.28 shows.

Double-click the **morphs** icon. This action changes the Save As dialog box to display the contents of the shared morphs folder, as Figure 11.29 shows.

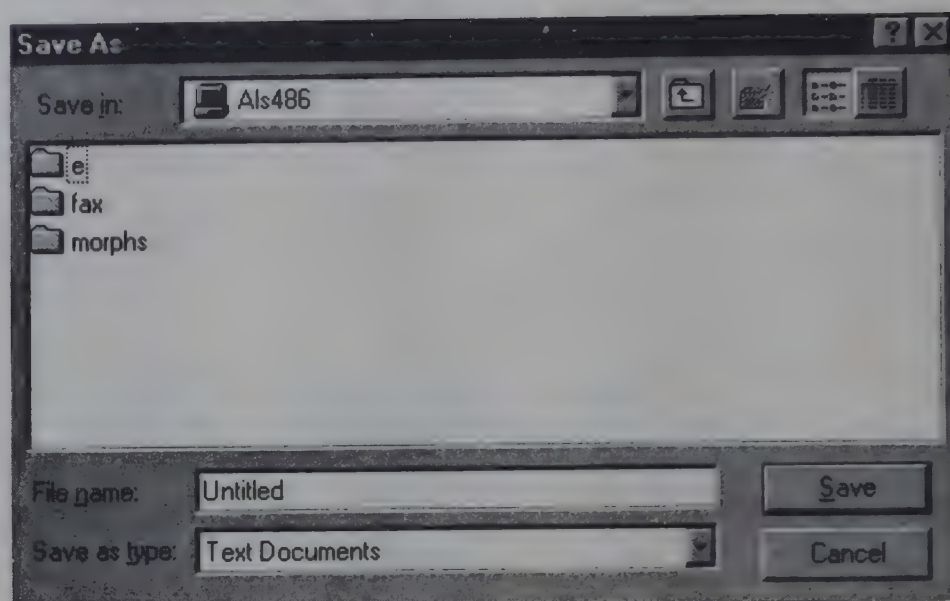


Figure 11.28 Saving to Als486.

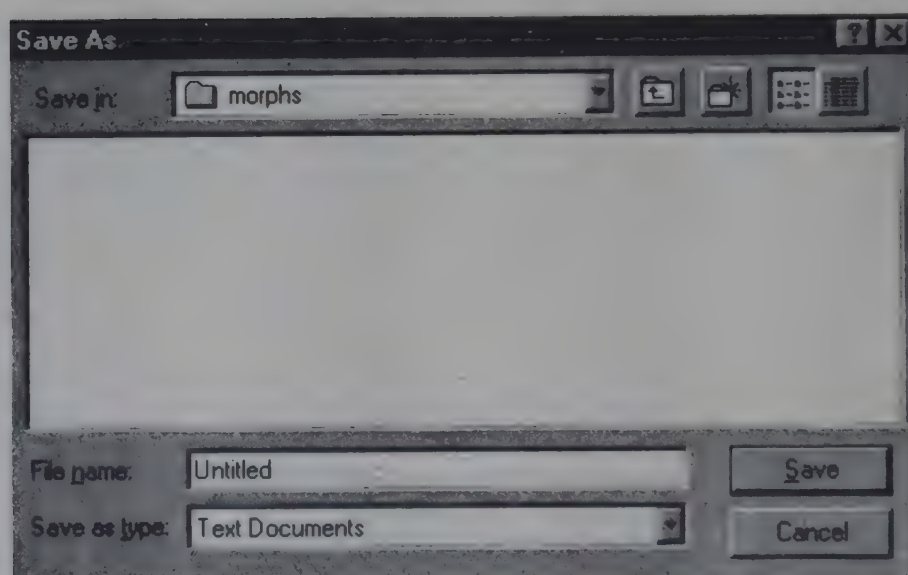


Figure 11.29 Saving to the morphs folder.

Now you can type a file name into the **File name** control; click the **Save** button to save the document in the shared morphs folder in the remote Als486 computer.

Retrieving documents works in the same way except that you are navigating the network by using the Open dialog box instead of the Save As dialog box.

MAPPING A NETWORK DRIVE

Most Windows 95 applications let you select documents from folders without worrying about DOS drives and subdirectories. Legacy applications, however, often use dialog boxes that follow the old conventions, and you need to address documents by their drives and subdirectories. If you are accessing documents from shared network resources, you must provide a drive letter for such legacy applications. Windows 95 allows you to assign a drive letter to a shared drive or folder. This procedure is called *mapping a network drive*.

From the Chicago computer, right-click the **Network Neighborhood** icon on the desktop and choose the **Map Network Drive** selection on the right-click menu. This action opens the Map Network Drive dialog box shown in Figure 11.30.



Figure 11.30 Map Network Drive dialog box.

The **Drive** drop-down list box shows all the drive letters available on your system. You can map the network drive to any available letter. The default is the lowest available letter.

The **Path** drop-down list box shows all the network paths that have been used by the system, whether or not they are still valid. At first, you simply have to know the name of the computer that owns the shared resource and the name of the shared drive or directory. Recall that I shared the Morphs folder on the D: drive of the computer named Als486. To map that folder to the F: drive of the other computer, I enter two backslashes, the name of the sharing computer, another backslash, and the name of the shared resource, as shown in Figure 11.31.

If you want the mapping to be persistent, check the **Reconnect at logon** checkbox. Every time you log on to the Chicago computer, it will remap the F: drive letter to the Morphs folder—but only if the Als486 computer is logged onto the network and still sharing the Morphs folder.

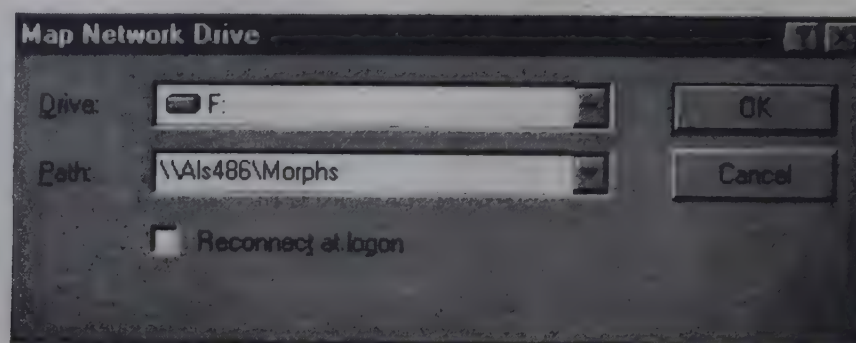


Figure 11.31 Mapping a network drive.

Click **OK**, and the F: drive is now mapped to the Morphs folder on the Als486 computer. When the shared resource is a folder, as it is here, its mapped drive looks to the accessing computer like the root directory of a real drive. This mapping provides access through the drive letter only to the shared folder and the folders contained in the shared folder.

Open the My Computer folder on the Chicago computer and view the mapped network drive, as Figure 11.32 shows.

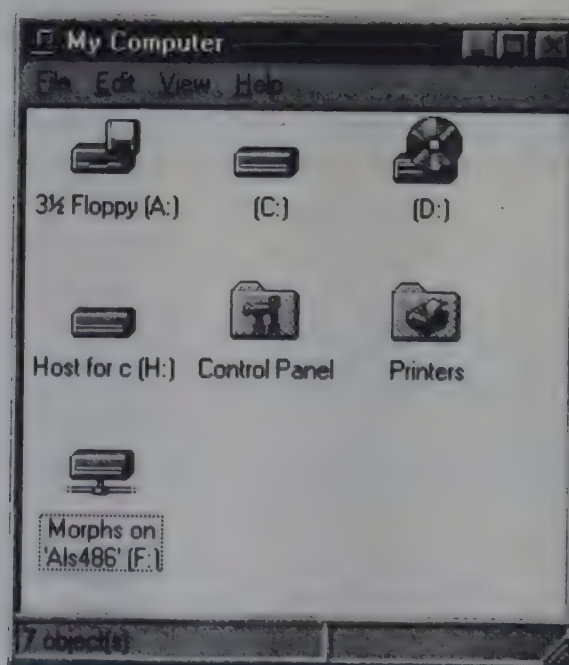


Figure 11.32 Mapped network drive.

You can double-click the mapped F: drive in My Computer and open it as if it were a local disk drive. Applications can access the morphs folder as if it were the F: drive.



CHAPTER 12

E-Mail: The Microsoft Exchange

Microsoft Exchange is the Windows 95 electronic mail component. It provides a common interface to all your mail services. It receives and sends messages between you and other people on your network, people on the Internet, CompuServe users, and users of many other electronic mail systems. Microsoft Exchange is also the vehicle through which you exchange faxes with other fax systems.

In this chapter, you will learn about:

- Installing Microsoft Exchange
- Setting up a postoffice
- Using address books
- Exchanging mail
- Managing mail messages

VERSIONS OF EXCHANGE

Microsoft Exchange is available in two versions. The regular version of Exchange included with Windows 95 offers basic mail and fax capabilities—you can send and receive mail and faxes in your networked system or to and from other systems. Microsoft Exchange Server is the more powerful, networked version of Exchange that runs on Windows NT systems. Exchange Server includes additional features such as Schedule+ (a project scheduling utility also included with the Office suite), a calendar generator, to-do lists, and an appointment book.

A Microsoft Exchange update, now available on the Microsoft Web site, makes a few changes to Exchange. The most noticeable difference is that the name of the product had been changed from Exchange to Windows Messaging. This helps users keep Windows Messaging from being confused with Exchange Server. As I mentioned, Exchange Server includes many features beyond E-mail capabilities and runs on a network.

ON-LINE SERVICES

You can use Microsoft Exchange as the conduit for your electronic mail on CompuServe, the Internet, The Microsoft Network, and, eventually, most other major electronic mail services. With all these mail services integrated into Microsoft Exchange, you can seamlessly read, write, forward, and respond to all your electronic mail by using the same common interface and procedures that you learn in this chapter. Although you can use Microsoft Exchange and The Microsoft Network to deliver your mail without ever using a different on-line service, you also have the option of setting up Exchange to work with your favorite service, such as CompuServe or America Online.

What's the benefit of using Microsoft Exchange to retrieve mail when you have a subscription to an on-line service? Microsoft Exchange enables you to check all your mail—whether you subscribe to a single service or many services—by choosing a command from a menu. Once you set up the different services to work with Exchange, you can easily have the program check your mail at any and all services you subscribe to. Exchange dials the service, downloads any mail

you've received, uploads any mail you're sending, and disconnects—all without any further action from you.

CompuServe

Setting up Microsoft Exchange to work with CompuServe Mail is a simple process. You begin by downloading the CompuServe Mail utility from CompuServe and installing it as directed. The CompuServe Mail program starts an automated Add a Service wizard that walks you through the process of setting up the program to work with Exchange. You simply answer the questions presented to you. When the wizard is finished, CompuServe is installed as one of the choices in Exchange's Tools menu, and you can use Exchange to send E-mail to and retrieve E-mail from CompuServe.

The Internet

If you use Microsoft Plus! and have installed the Internet Tools in Windows 95, you can also set up Exchange to work with an Internet service provider (ISP). You'll need to get the necessary information—such as your domain name, password, mail server, and access number—from your provider before you can enter the information in Exchange. You can then use the Internet Setup wizard to enter the information that Exchange needs to interact successfully with your Internet provider. For more information about Microsoft Plus!, see Appendix A.

The Microsoft Network

The Microsoft Network is a full-featured communications service, similar in scope and function to other on-line information services such as CompuServe and America Online. The Microsoft Network is provided with Windows 95 and is installed automatically unless you deselect it during installation. You can use The Microsoft Network (also called MSN) to register your copy of Windows 95 or any other Microsoft application. On-line, you'll find technical support areas for all Microsoft products and a world of other information on everything from business to hobbies to family issues and more. Chapter 16 is about the Microsoft Network.

Other On-Line Services

Many of the other popular on-line services, such as America Online, MCI Mail, Prodigy, and others, will have mail utilities available that enable you to set them up to transfer mail with Microsoft Exchange. In your on-line service, go to the Customer Service area and search for utilities that work with Exchange.

INSTALLING MICROSOFT EXCHANGE

If you installed Microsoft Fax in Chapter 10, it launched the installation of Microsoft Exchange. In that case, you may not have installed Microsoft Mail, which you may or may not need, depending on whether you are working on a networked system or a stand-alone system. If you are working with a stand-alone system, you do not need to install Microsoft Mail to use Exchange. If you are working on a network, check with your system administrator before you install Microsoft Mail and set up a postoffice. Setting up a new postoffice when your network has one in operation can cause a number of problems that will end with your having to uninstall and reinstall programs to get your company mail system working again.

If you did not install Microsoft Fax in Chapter 10, proceed with the section in this chapter titled "Installing Microsoft Fax." Otherwise, right-click the **Inbox** icon on the desktop and choose the **Properties** command from the right-click menu to open the MS Exchange Settings Properties dialog box shown in Figure 12.1.

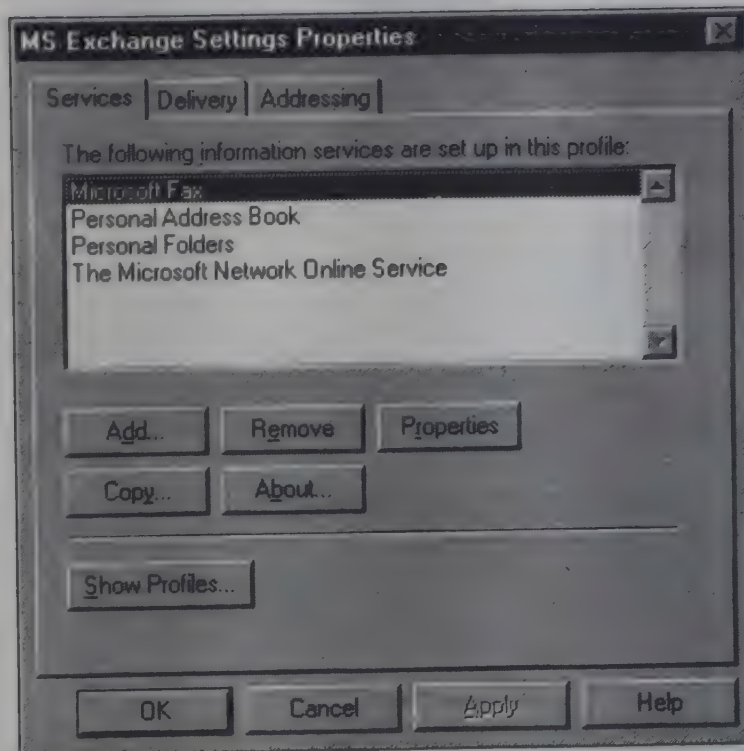


Figure 12.1 MS Exchange Settings Properties dialog box.

Click **Add** to open the Add Service to Profile dialog box shown in Figure 12.2.

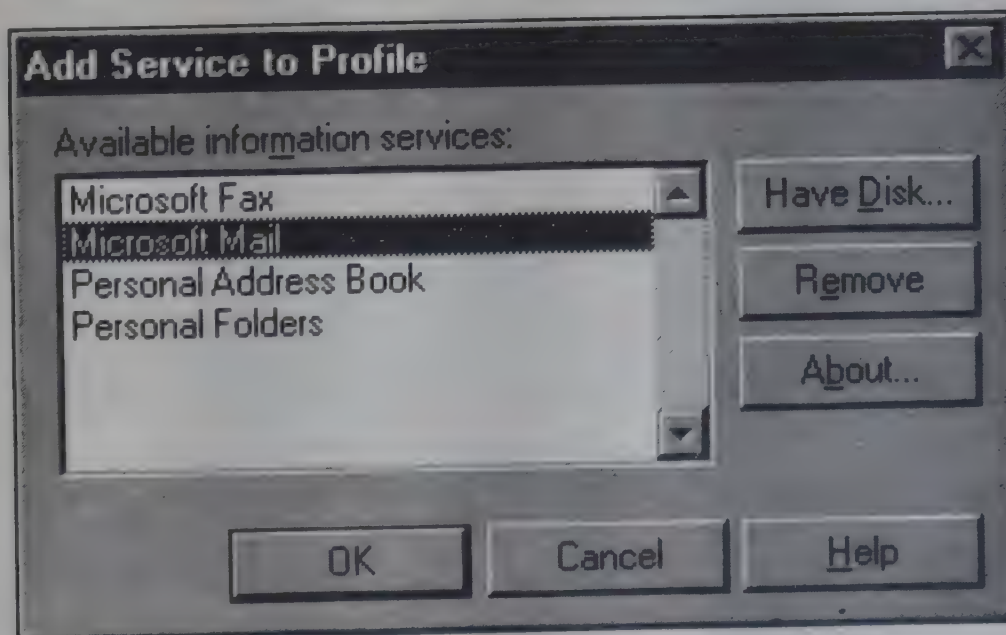


Figure 12.2 The Add Service to Profile dialog box.

If you are working on a network, select **Microsoft Mail**, click **OK**, and proceed with the discussion titled “Installing Microsoft Mail” later in this chapter.

Installing Microsoft Fax

Double-click the **Inbox** icon on the desktop to start the installation. Set the options to install Microsoft Fax and Microsoft Mail.

If there is no **Inbox** icon on the desktop, double-click the **Add/Remove Programs** icon on the Control Panel, select the **Windows Setup** page, set the **Microsoft Exchange** and **Microsoft Fax** options, and click **OK**. When that part of the installation is finished, there will be an **Inbox** icon on the desktop. In some cases the installation procedure proceeds automatically, and in other cases it does not. If it does not, double-click the **Inbox** icon to proceed with the Inbox Setup wizard shown in Figure 12.3.



Figure 12.3 Selecting MS Exchange services.

The Inbox Setup wizard may have both **Microsoft Fax** and **Microsoft Mail** selected. In this example, we are installing both options because I want to show you how to use a shared network fax server. If you are working on a stand-alone system, however, you do not need to select Microsoft Mail.

Installing a Fax/Modem

Click **Next** on the wizard. The wizard asks where your fax/modem is located, as shown in Figure 12.4.

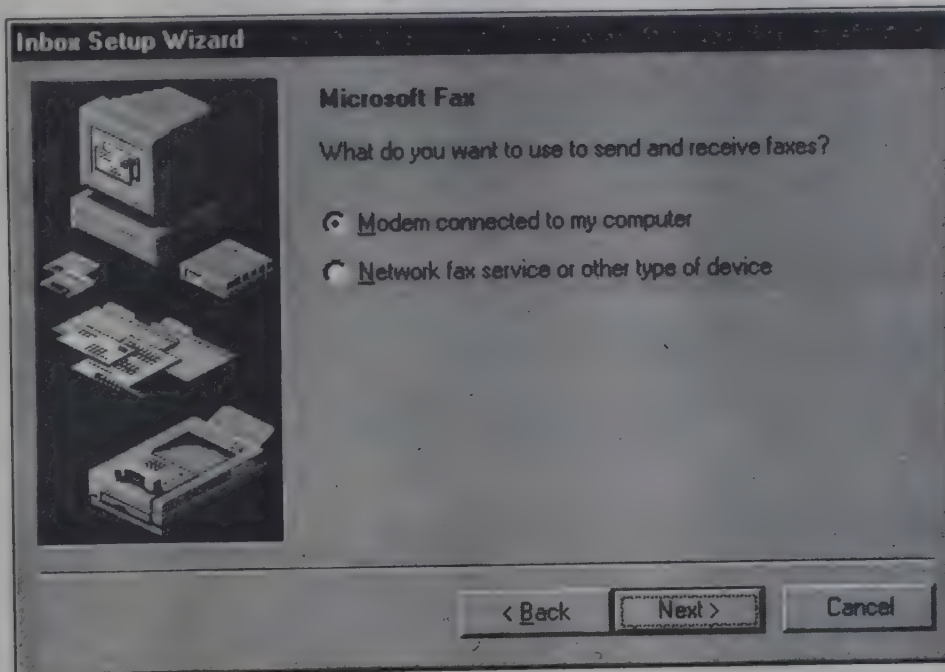


Figure 12.4 Choosing a modem option.

If the fax/modem you want to use is connected to your PC, choose the first option on the wizard. Otherwise, select the second option and click **Next**. That's what we'll do here. The wizard displays the Add a Fax Modem dialog box shown in Figure 12.5.

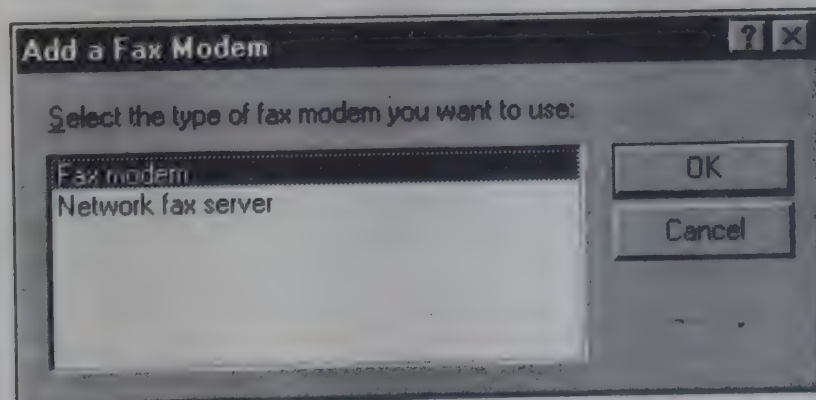


Figure 12.5 The Add a Fax Modem dialog box.

Select the **Network fax server** option and click **OK**.

Finding a Shared Fax/Modem

The wizard displays the dialog box shown in Figure 12.6.

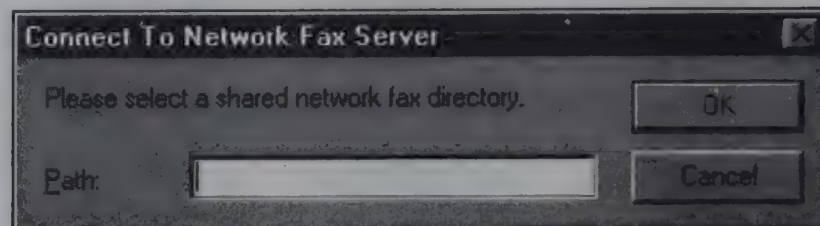


Figure 12.6 Connect To Network Fax Server dialog box.

At this point you need to find out where the network fax modem is located. We can assume that it's not on your PC; otherwise, we wouldn't be at this point in the wizard. Go find the person who has a shared fax/modem. You learned how to share a fax/modem in Chapter 10, and the person who has one must have gone through that procedure. Find out the name of the computer and the name under which the fax/modem was shared. In Chapter 10, we shared a fax/modem on the computer named Als486. We named it Fax. You can determine that piece of information now by opening the Network Neighborhood (Chapter 11) and double-clicking each of the computers in the neighborhood until you find something named Fax. Figure 12.7 shows the Network Neighborhood with a computer named Als486 opened to show that it is sharing, among other things, something named "fax."

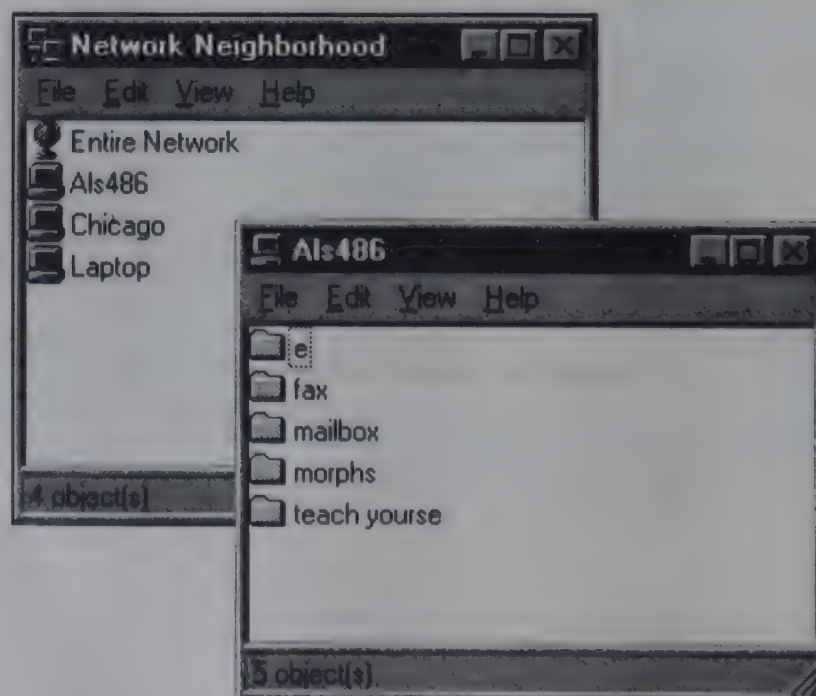


Figure 12.7 A remote computer with a shared fax/modem.

Can you know for sure that the fax object in Figure 12.7 is a shared fax/modem? No, not by just looking at it. The best way to find out is to ask its proprietor, the user at the Als486 computer. Someone could have gotten cute and given confusing names to their shared resources.

Specifying a Shared Fax/Modem

Enter the computer and the name of the shared fax/modem into the dialog box in Figure 12.6. Figure 12.8 shows the correct way to make that entry assuming a computer named Als486 and a shared fax/modem named Fax.

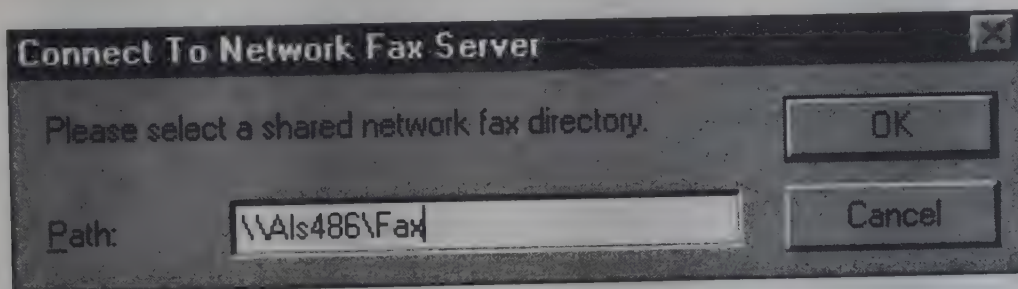


Figure 12.8 Specifying a shared fax/modem to use.

Observe the syntax of the backslash characters. Two of them precede the computer name and one separates the computer name and the fax/modem name. Click **OK** when you are ready to proceed.

Shared Fax/Modem Error Messages

There are several error messages that you can get depending on what you type and what is going on in the network. If you enter the computer name incorrectly or if the computer is not logged on to the network, you see the error message shown in Figure 12.9.

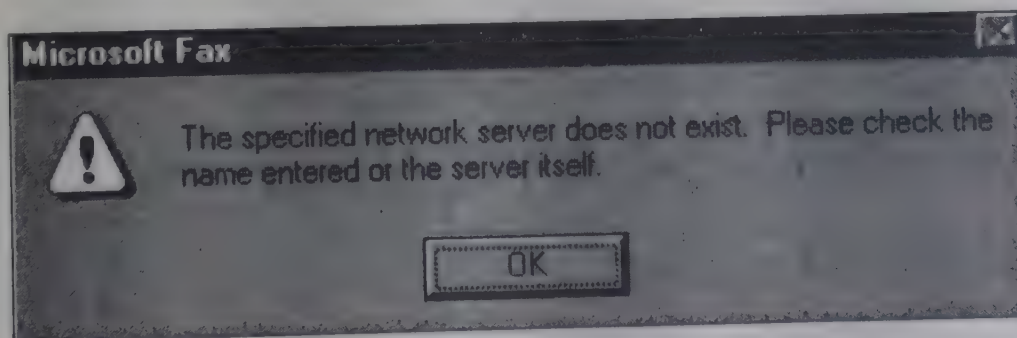


Figure 12.9 Incorrect computer name entered.

Although you think of Als486 as just another computer, Windows 95 is calling it a *network server*.

Oddly, if you enter the computer name correctly but misspell the name of the shared fax/modem, the wizard displays the same error message that it displays when you provide an invalid computer name. This behavior implies that the network server that the message refers to is really a combination of the computer name and the fax/modem specification.

If you enter both parts correctly, you can still get an error message. Figure 12.10 shows what happens when the remote computer is running but is not currently running MS Exchange.

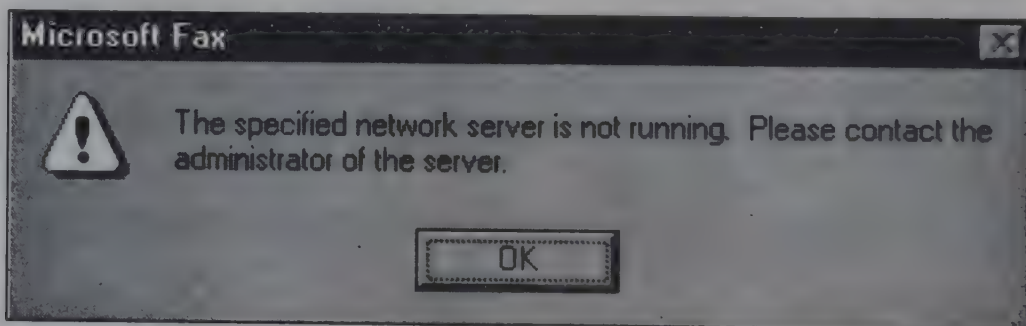


Figure 12.10 MS Exchange is not running in the remote computer.

Go see the person who owns the remote computer and ask him or her to run MS Exchange so that you can proceed with your own installation. Then return to your computer, get rid of the error message, and click **OK** on the Connect to Network Fax Server dialog box.

The wizard posts the selection as shown in Figure 12.11.

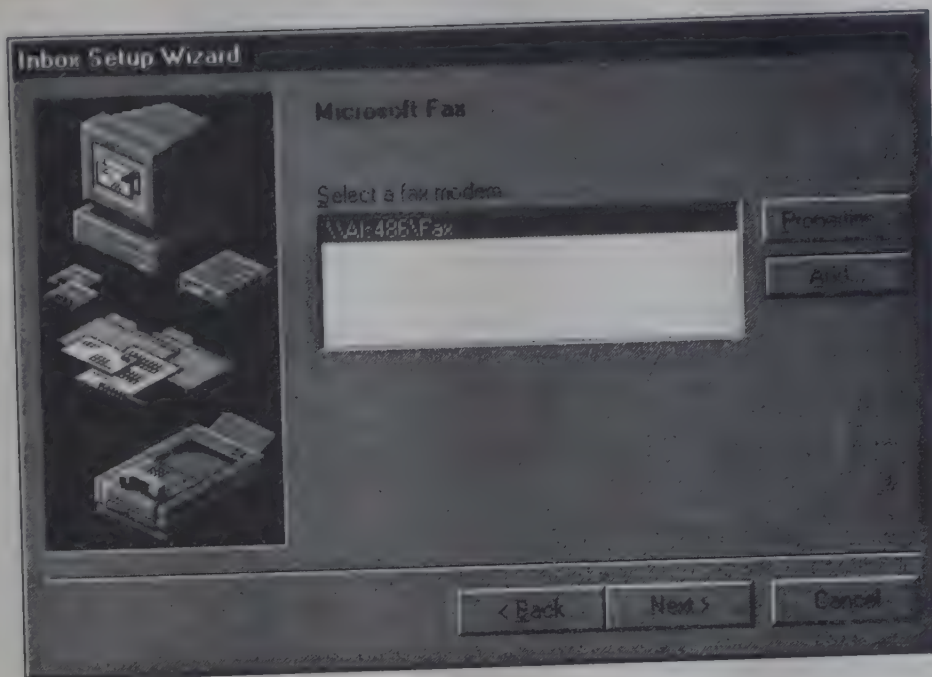


Figure 12.11 Network fax server selected.

Your Name and Fax Number

MS Exchange wants your name and fax/modem's phone number. You cannot proceed beyond this point without providing something. Figure 12.12 is the dialog box you must fill in.

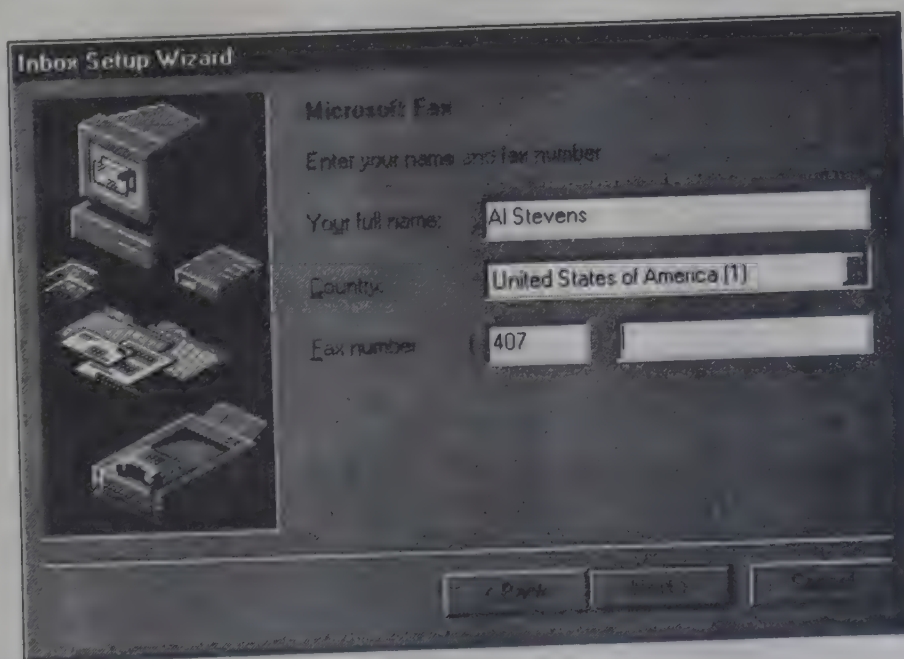


Figure 12.12 Entering your name and number.

Without something in these fields, the wizard does not proceed. If you try, you get an error message telling you that it might be illegal not to provide the fax number. If you want to use a service that automatically faxes a document to you when you send a token fax, the system needs the information. Fill in something and click **Next**.

Installing Microsoft Mail

You need to know two things about Microsoft Mail: If you are working on a stand-alone system, you don't need Mail; and if you are working on a network, you need to check with your system administrator before you install it. Microsoft Mail creates a postoffice, which handles the flow of mail much as a real postoffice does. If you set up a new postoffice when your network already has one in place, you can cause a number of problems that will ultimately lead to your reinstalling Exchange.

The Inbox Setup wizard needs to know where your postoffice is. Someone on the network must have set up a postoffice. The section in this chapter titled "Setting Up a Postoffice" describes that procedure. For now, assume that someone has already done it.

A postoffice exists on one computer in the workgroup, and everyone uses that postoffice to send and receive mail. By isolating the postoffice, you can send mail even though the recipient is not logged on to the network. You can also receive mail when its sender is not logged on to the network.

To proceed with the installation of Microsoft Mail, you must know where the postoffice is and what its name is. Unlike the shared fax/modem installation procedure that we stumbled through earlier in this chapter, this wizard provides a **Browse** button that helps you find the postoffice. Figure 12.13 shows the wizard as it asks you for a postoffice.

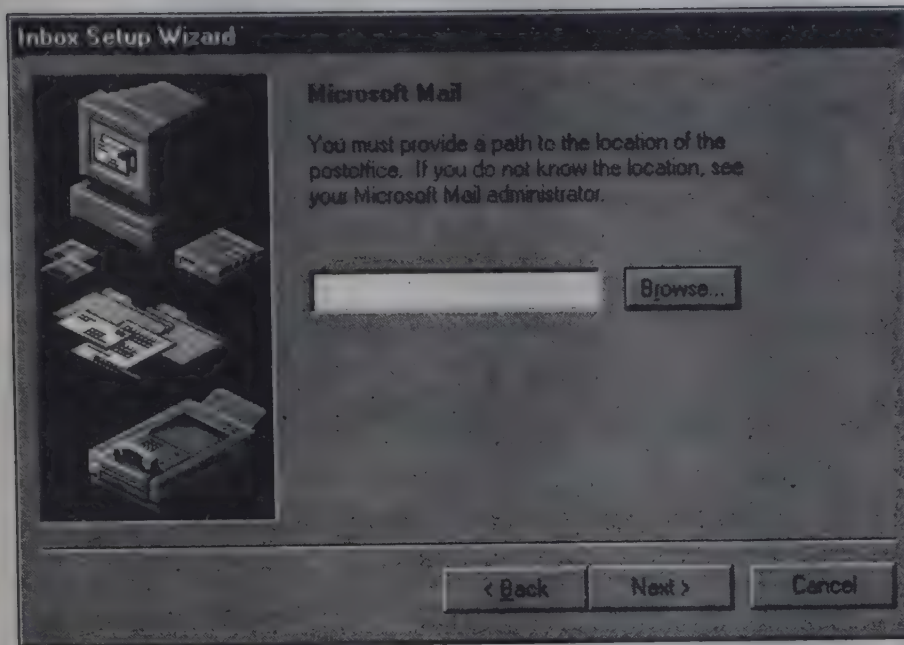


Figure 12.13 Asking for the postoffice.

If you know the address of the postoffice, type it in and click **Next**. How would you know? Maybe the network administrator has it posted somewhere.

The **Browse** button helps somewhat, but you need to know what you are looking for. When you click **Browse**, it opens an Explorer-like display, as shown in Figure 12.14.

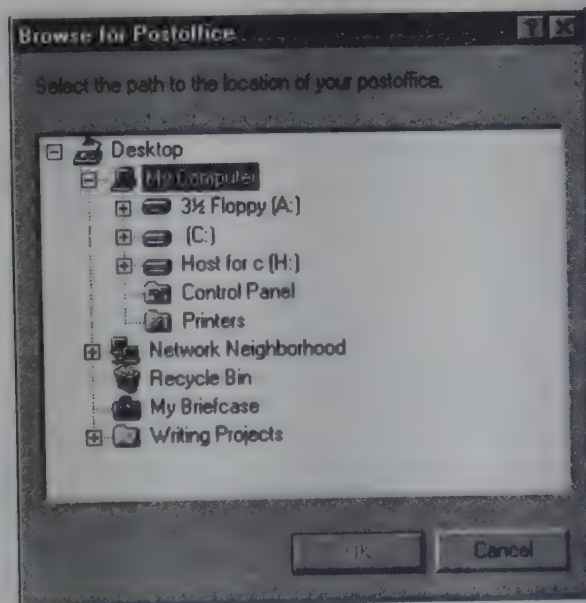


Figure 12.14 Browsing for a postoffice.

You know that the postoffice is not on your computer, although it could be. Whoever manages the postoffice sends and receives mail, too, and that might be you. For this exercise, however, assume that the postoffice is somewhere else, which means that you must look in the Network Neighborhood to find it. Click the + button next to the **Network Neighborhood** icon in the Browse for Postoffice dialog box. This action expands the neighborhood's tree to show the computers in the workgroup, as Figure 12.15 shows.

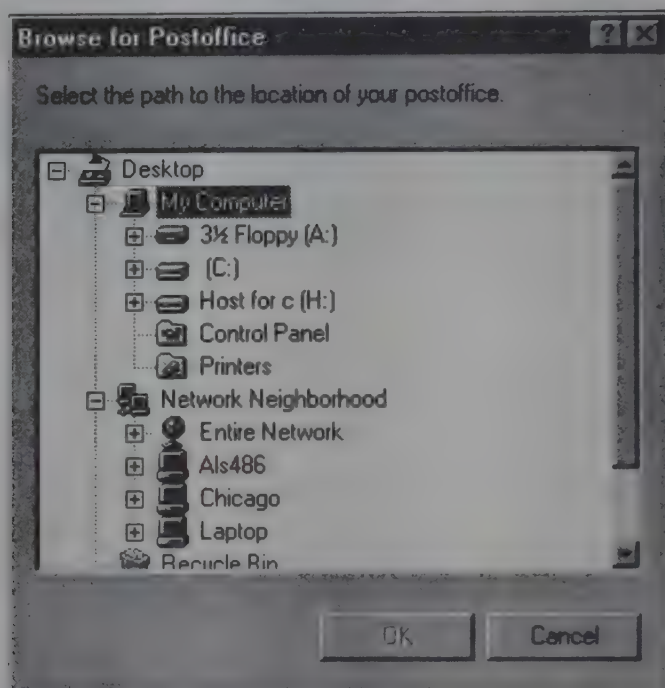


Figure 12.15 Expanded Network Neighborhood.

Now you must determine which computer has the postoffice. We can assume that such things aren't a secret, although you could be working late and alone without anyone to ask.

We should also assume that the computer with the postoffice is always logged on. Unless no one ever works odd hours, the postoffice computer should be left running and logged on to the network so that people can retrieve and send mail messages whenever they want to.

In this case, the computer named **Als486** contains the postoffice. Click the + button next to the **Als486** icon to expand its shared resources, as shown in Figure 12.16.

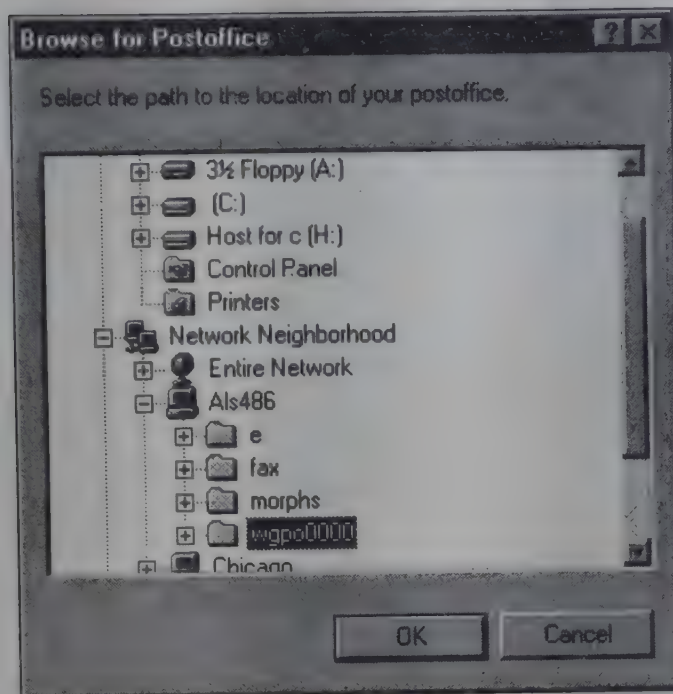


Figure 12.16 Als486 expanded.

Observe the shared object named **wgpo0000**. That is a postoffice—Microsoft Mail uses names like that. The mail administrator can override the assigned name and may have named it something else. With luck, either you know the name or it's something intuitive. Select the **wgpo0000** icon and click **OK**. The wizard fills in the name of the postoffice, as shown in Figure 12.17.

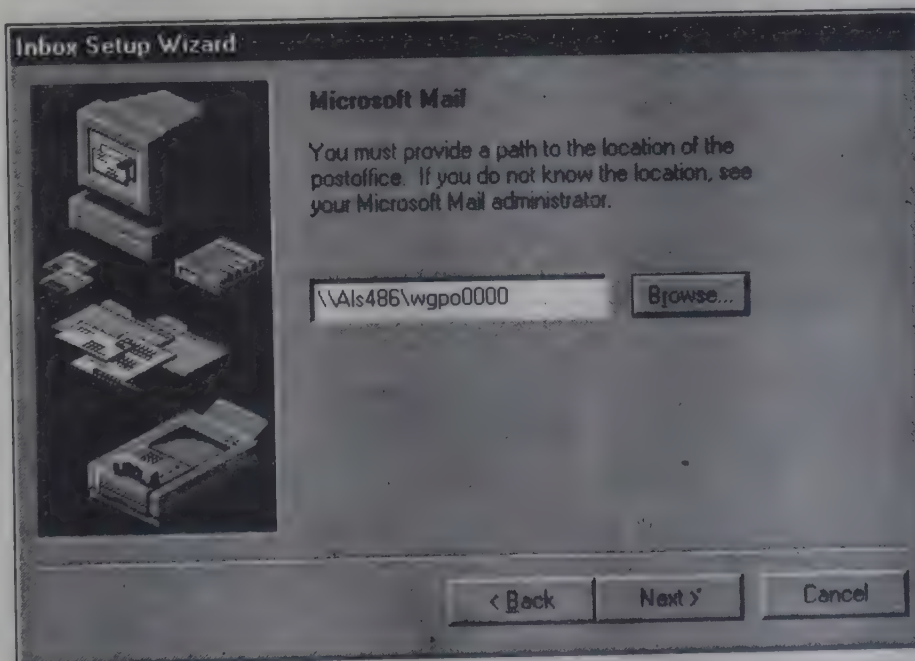


Figure 12.17 A postoffice selected.

Click **OK** to move on. Now you have to identify yourself. Figure 12.18 shows the wizard asking you to select yourself from a list of people who use the postoffice.

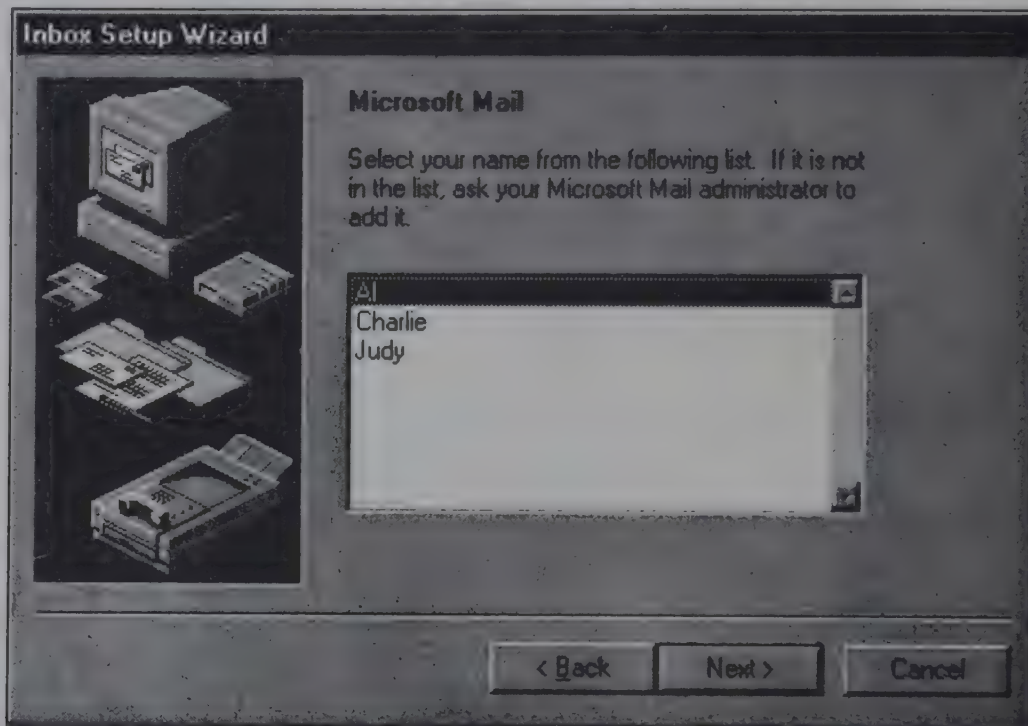


Figure 12.18 Selecting your name.

If your name is not on that list, you do not have a mailbox in the postoffice. The mail administrator must add you to the list. The mail administrator is not necessarily the same person who operates the computer that contains the postoffice. Whoever the mail administrator is, find him or her and get your name on the list. After that is done, click **Back** and then **Next**. Select your name from the list and click **Next**.

Figure 12.19 shows the wizard prompting you to enter a password.

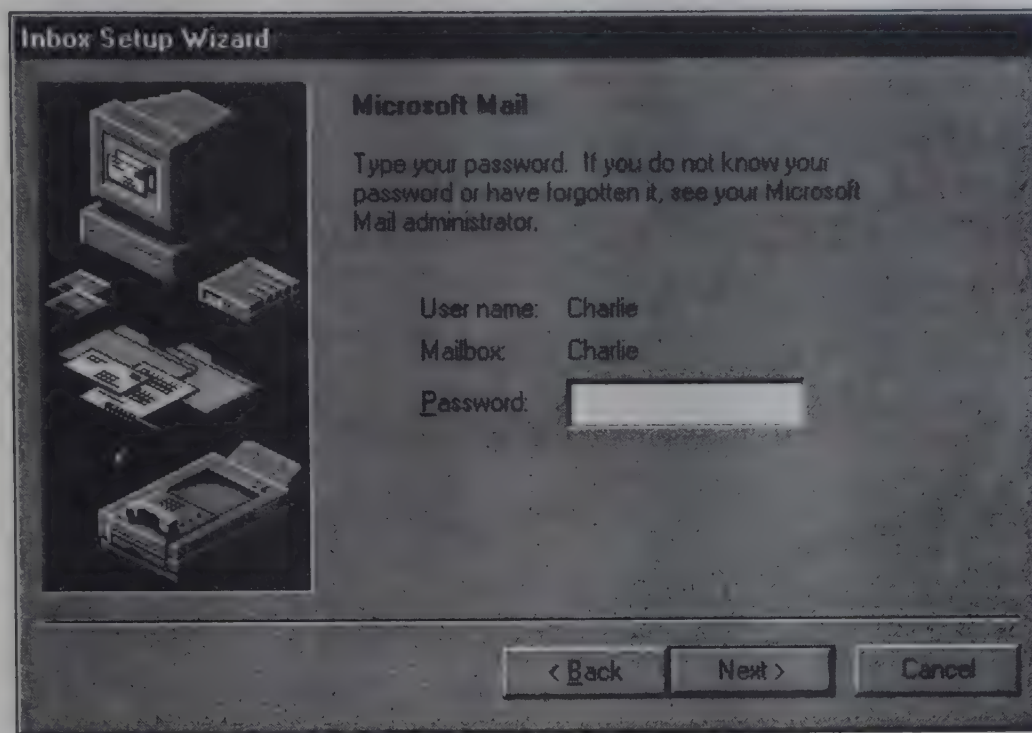


Figure 12.19 Entering a password.

If you have a password, the mail administrator put it in when you were added to the list. You should know what it is. Enter the password. If you don't have one, leave it blank. Click **Next**.

Figure 12.20 shows the wizard asking for your personal address book. If you already have one, you must enter its location. You can browse to find it. If you do not have one, the wizard creates one for you. Click **Next**. The wizard makes a similar request for a personal folder file and creates one if you do not already have one. Click **Next** again.

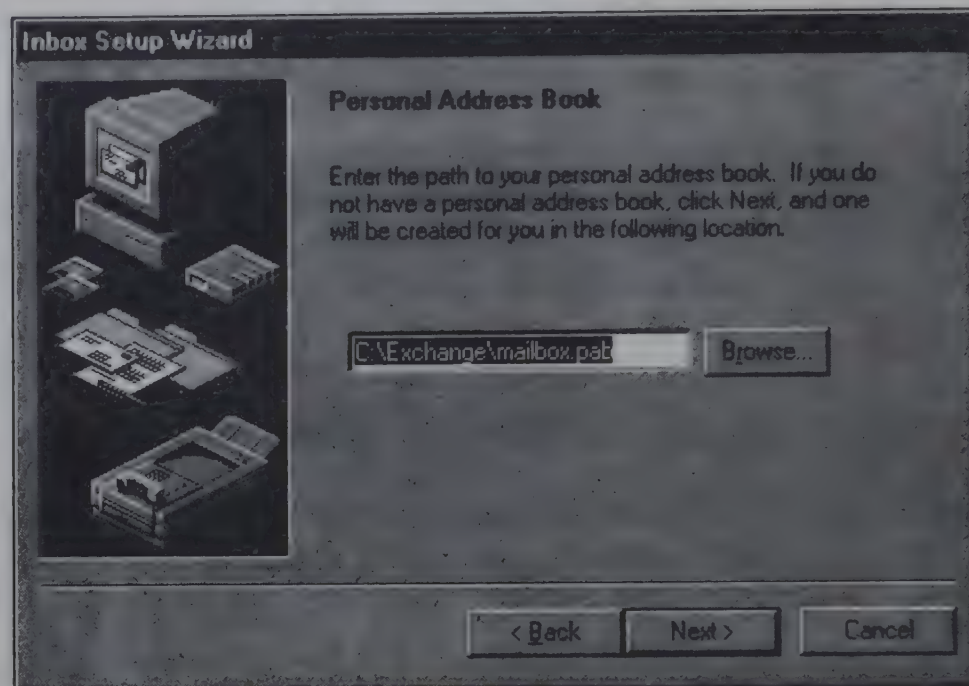


Figure 12.20 Entering an address book.

The wizard asks you to choose one of two radio button options that specify whether you want to run Microsoft Exchange every time you start your computer. If you have a fax/modem that others share, you should choose to add Inbox to the StartUp group. Make the selection you want and click **Next**. The wizard displays a final screen announcing its success. Click **Finish**. Microsoft Exchange is now installed on your computer, and you can send and receive mail and faxes.

Upon installation, Microsoft Exchange runs itself. As a bonus, you get a message from the system. Figure 12.21 shows Microsoft Exchange running with a message in the Inbox. You will learn how to read this message in the section in this chapter titled "Exchanging Mail."

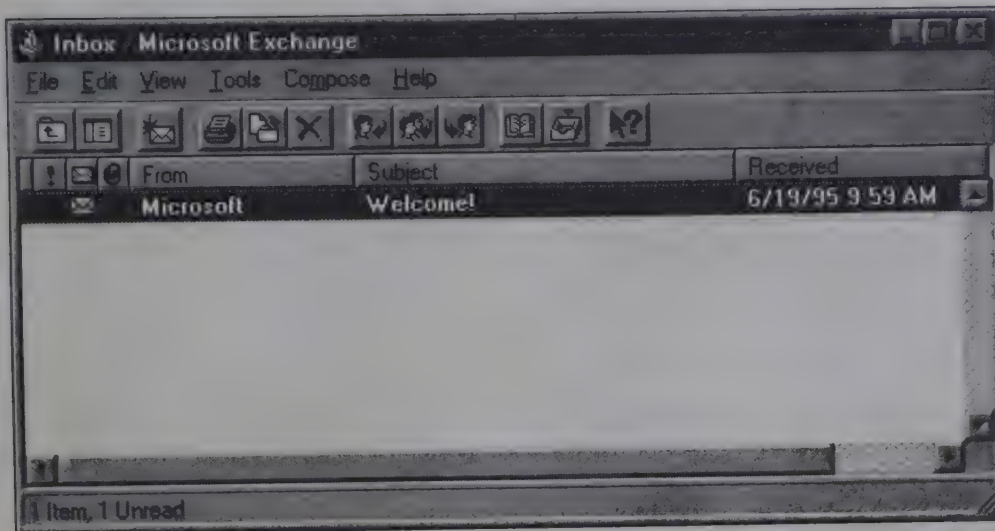


Figure 12.21 Your first message.

USING ADDRESS BOOKS

Microsoft Exchange supports two address books: the Personal Address Book of each user, and the Postoffice Address Book that serves the users in a workgroup. To open an Address Book, choose the **Address Book** command on the Tools menu or click the **Address Book** tool button on the toolbar (the third tool button from the right end of the toolbar). This action opens the Address Book application shown in Figure 12.22.

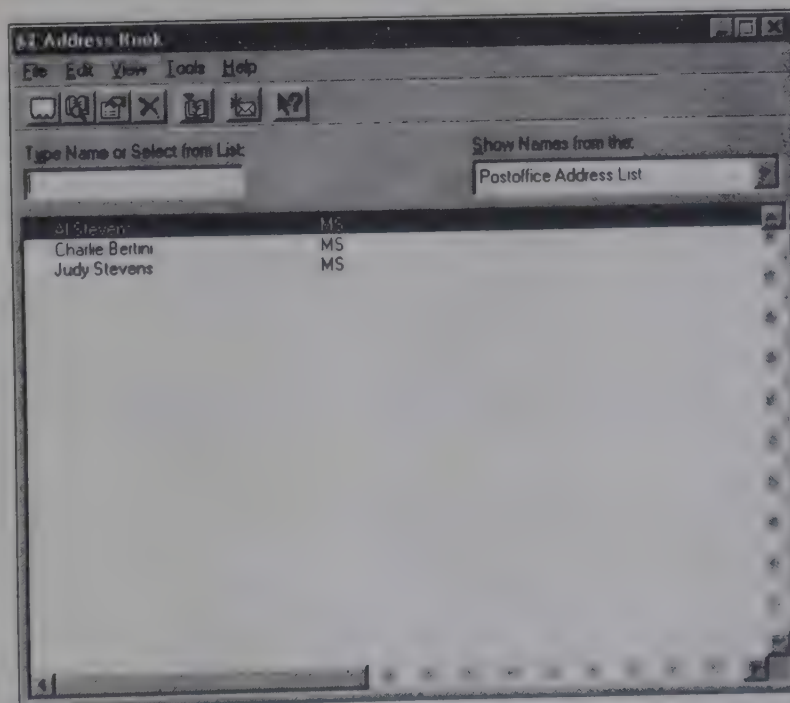


Figure 12.22 The Address Book.

By default, the Address Book on a networked system opens to display the Postoffice Address List, which lists the names of MS Mail users in your workgroup. The mail administrator adds these names when new users install Microsoft Mail. You'll learn how that works in the discussion titled "Administering a Postoffice" later in this chapter. You cannot add and delete entries in this list; only the mail administrator can do that. For these exercises we had the administrator add last names to the Postoffice Address List.

Most users compile a Personal Address Book and use it as the default. If you are on a stand-alone system, you will see your Personal Address Book by default when you first click the **Address Book** button in the toolbar. The Personal Address Book contains entries for fax recipients and mail correspondents who use other electronic mail services.

Searching for an Entry

Choose the **Find** command on the Tools menu or click the **Find** tool button to open the Find dialog box shown in Figure 12.23.

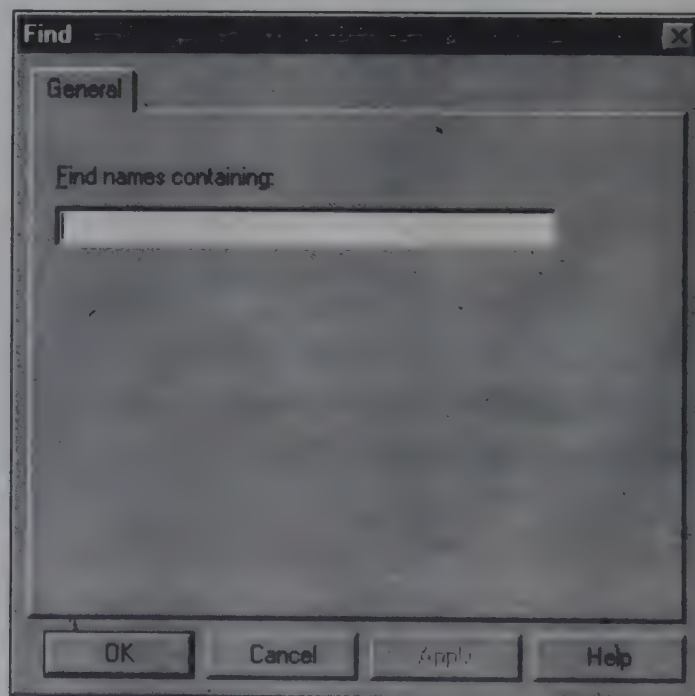


Figure 12.23 The Find dialog box.

It's pointless to launch a search for a name when the list has only three entries, but this exercise shows you how the search procedure works. Type the first few characters of a part of a name into the text box control in the Find

dialog box. Click **OK**. The Address Book shows a list of names that match the search. For example, if I typed **Stev**, the Address Book would display the two entries for the Stevens family. Figure 12.24 shows that display.

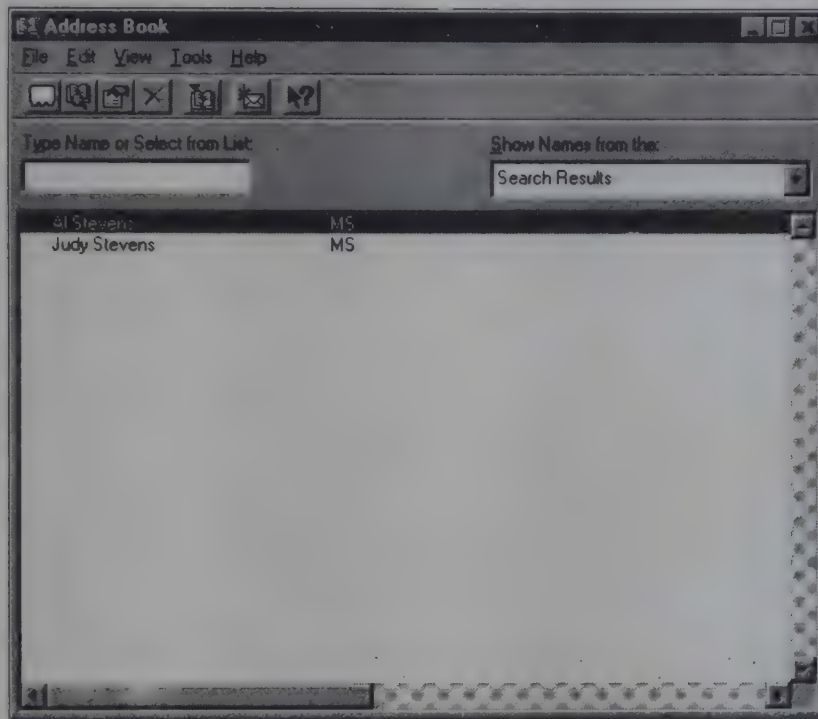


Figure 12.24 Address Book search results.

Observe that the **Show Names** drop-down list box is set to **Search Results**. Open the drop-down list box and choose **Postoffice Address List** to return to the full list display.

You can also search by typing a part of the name into the **Type Name** edit-box in the Address Book. As you type more of the name, the name selector bar moves to the first name in the list that matches what you type. This search strategy works only with the name entries as read from left to right. It does not search on other parts of the name the way the **Find** command does.

Moving an Entry to Your Personal Address Book

If Judy wants to add certain people to her Personal Address Book, she can select those entries in the Postoffice Address List and copy them. She probably does not want her own address in the Personal Address Book because she does not send mail to herself. She might not want all the workgroup members. Perhaps she corresponds with only a few of them regularly and prefers to keep

her Personal Address Book brief, switching to the Postoffice Address List for infrequent correspondence with other people.

To select several people from the list, press and hold the **Ctrl** key while you click the names to select. Then choose the **Add to Personal Address Book** command on the File menu or click the corresponding tool button, which is the third button from the right end of the toolbar. This action copies the selected entries into your Personal Address Book.

Viewing Your Personal Address Book

Open the **Show Names** drop-down list box and click the **Personal Address Book** entry. This action closes the Postoffice Address List and opens the Personal Address Book, which contains the entries that you copied from the Postoffice Address List and other entries that you add.

Adding an Entry to an Address Book

Choose the **New Entry** command on the File menu or click the leftmost tool button to open the New Entry dialog box shown in Figure 12.25.

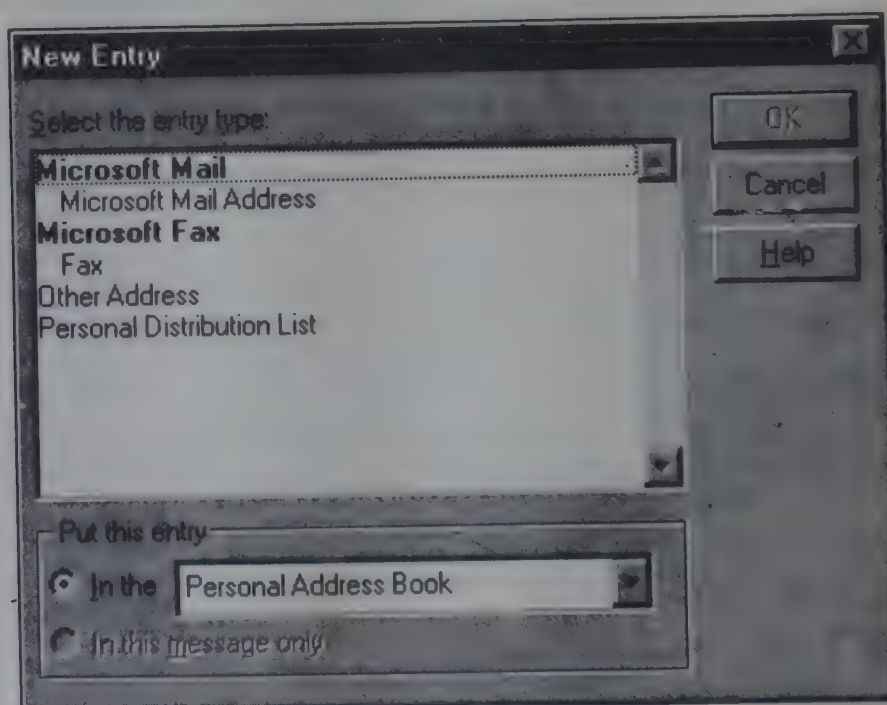


Figure 12.25 The New Entry dialog box.

Select the kind of entry you are adding. For this exercise, we'll add an entry for someone to whom we send faxes. Select the **Fax** item in the list box and click **OK**. This action opens the New Fax Properties dialog box shown in Figure 12.26. This dialog box is similar whether you are adding a person's e-mail address or fax information. Several tabs give you the option of entering a great deal of information about the recipient.

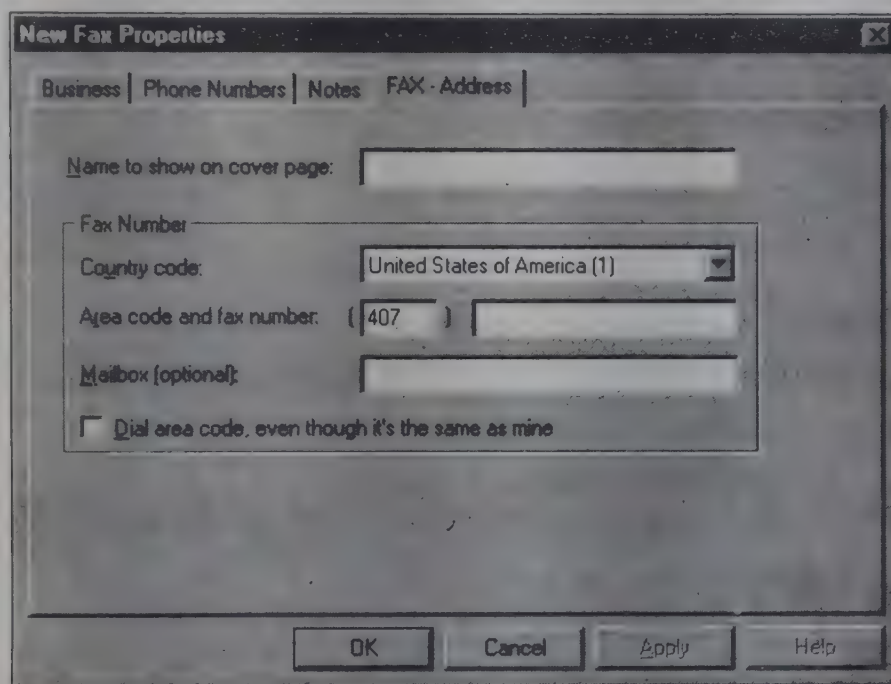


Figure 12.26 New Fax Properties dialog box.

Type the recipient's name in the **Name** text box and fill in the rest of the form as appropriate. To send a fax you must enter a fax phone number. The other pages in this dialog box let you enter data about the person, but you don't need to make these entries to send a fax. Click **OK** to copy the new address to your Personal Address Book.

Deleting an Entry from the Address Book

You cannot delete entries from the Postoffice Address List, but you can delete entries from your Personal Address Book. Select the entry and choose the **Delete** command on the File menu or click the delete tool button, which is the button with the hand-drawn X. Figure 12.27 shows the dialog box that asks you to confirm the deletion.

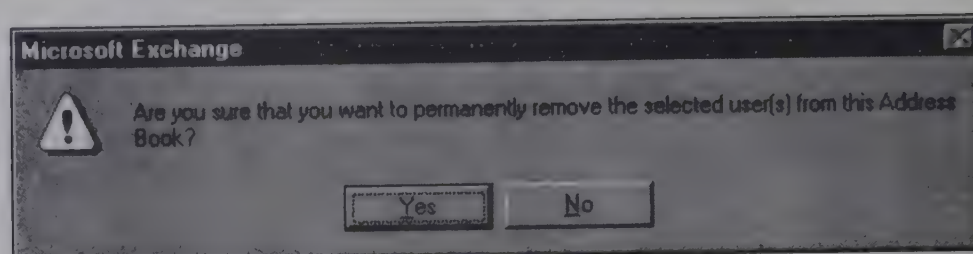


Figure 12.27 Deleting an entry from the Address Book.

Setting Address Book Options

Choose the **Options** command on the Tools menu to open the Addressing dialog box shown in Figure 12.28.

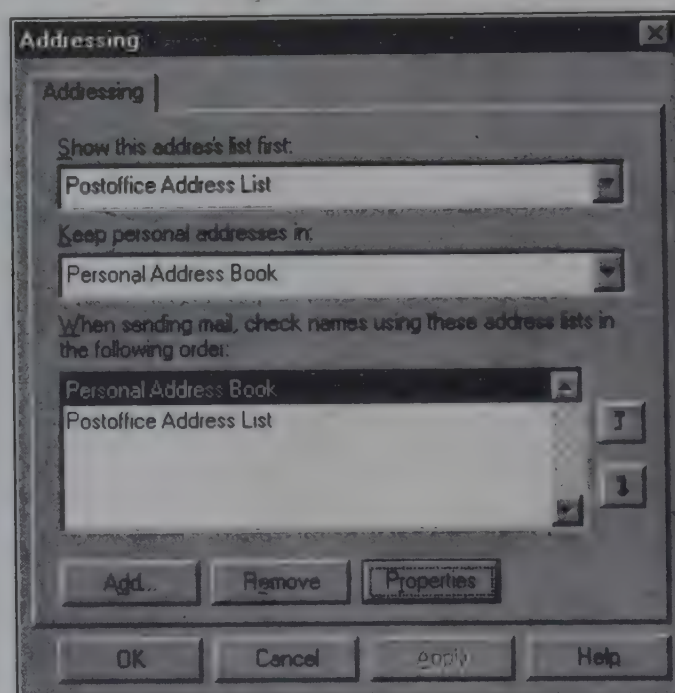


Figure 12.28 The Addressing dialog box.

The topmost drop-down list box has an option that you probably want to change. It tells the system which address book to display each time you open the Address Book application. Most people prefer to see the Personal Address Book first, but the default is to open with the Postoffice Address List if you're on a network. Open the drop-down list box and select **Personal Address Book** to change this default. If you have Microsoft Network installed, you'll also see that service name listed in the drop-down list.

The list box at the bottom specifies the order in which address books are searched when you enter a recipient's name in a message or fax. There might be two different *Jacks*, for example, in the two address books.

The **Add** button allows you to add address books to the list. At first, there won't be any. A new installation may show the Postoffice Address List (if you're using a networked system) and the Personal Address Book. You may also see The Microsoft Network in this list.

The **Remove** button lets you remove an address book from the list so that it is never searched for addressing details when you construct a message.

The **Properties** button opens the Personal Address Book Properties dialog box shown in Figure 12.29.

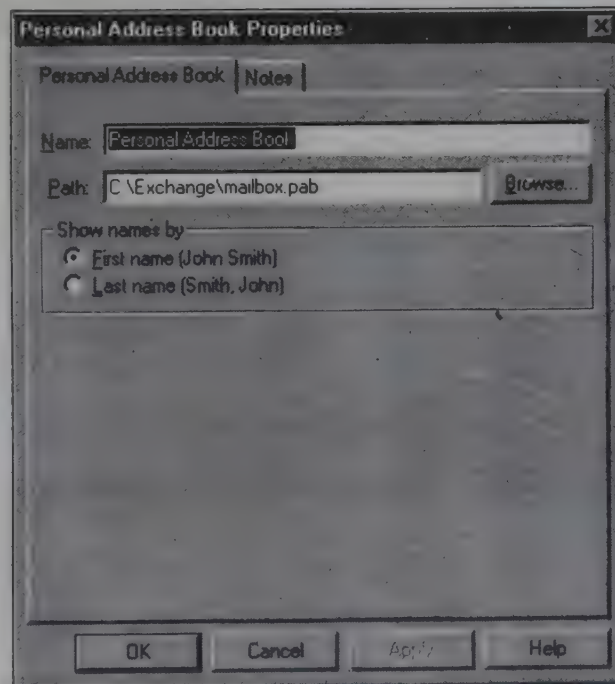


Figure 12.29 Personal Address Book Properties dialog box.

You can control the way that names are displayed in the address book by selecting the **First name** or **Last name** radio button.

EXCHANGING MAIL

You read and write messages in the Microsoft Exchange application. So far, all you've seen of this application is the Inbox that the application opens when you double-click the **Inbox** icon on the desktop. The Inbox is a personal folder.

There are several others, and you will learn about them soon. First, let's deal with sending mail messages to other people on the network.

Writing New Messages

Figure 12.30 is the Inbox application as it appears after you have installed Microsoft Mail and Microsoft Fax.

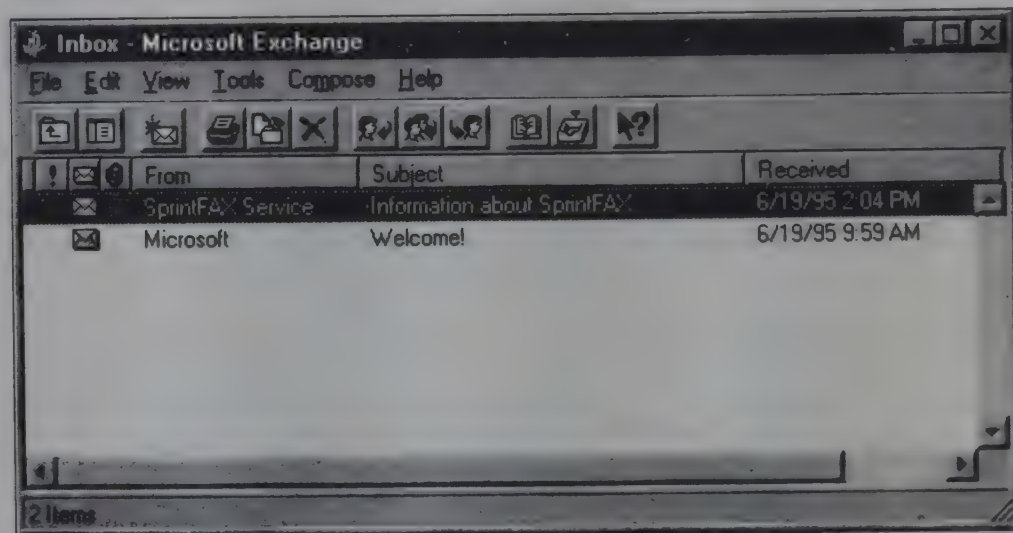


Figure 12.30 The Inbox.

The Inbox in Figure 12.30 already contains two documents. We'll deal with them shortly. For now, choose the **New Message** command on the Compose menu or click the **New Message** tool button (third button from the left) to open the New Message document shown in Figure 12.31.

If you know the name of the recipient exactly as it appears in your Personal Address Book or the Postoffice Address List, type the name into the **To** text box. Otherwise, click the **To** button to open the Address Book dialog box shown in Figure 12.32.

You can select a name from the list, type part of a name, or find one using the **Find** button, which works just like the **Find** button that you used earlier. When you find the name of the intended recipient, select it and click **To**. You can build a list of recipients by repeating this procedure. To build a list of **Cc** recipients, use the **Cc** button instead of the **To** button. When the lists are complete, click **OK** to return to the New Message application.

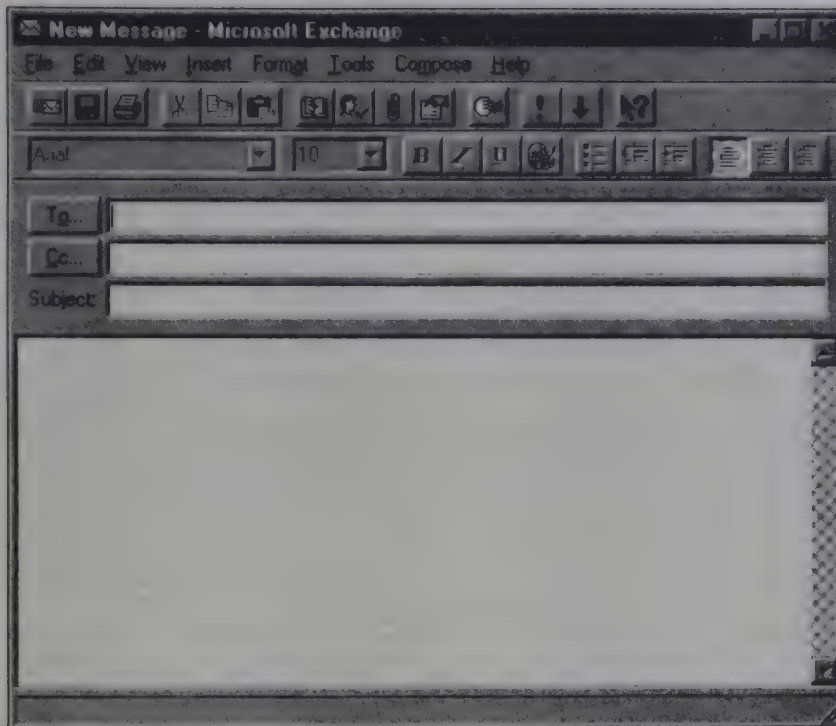


Figure 12.31 A New Message.

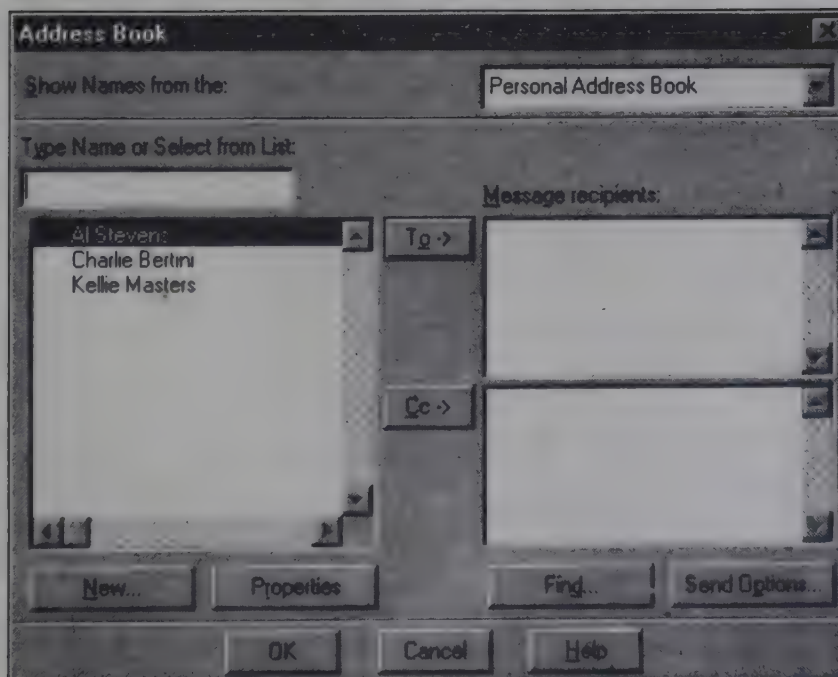


Figure 12.32 The Address Book dialog box.

Type a subject and message text into the New Message application. Use the buttons and drop-down list box on the second toolbar to specify font, font size, color, typeface, indenting, and alignment.

When the message is complete, choose the **Send** command on the File menu or click the **Send** tool button (the leftmost button on the upper toolbar).

If you are using Exchange on a stand-alone system, the process is slightly different. When you click the **Send** tool button, the message is sent to your Outbox, another folder in your Exchange Personal Folders list. To have your computer dial the receiving system, you need to open the Tools menu and choose **Deliver Now**. When the Deliver Now submenu appears, choose the service you want to use to deliver the message. Exchange then instructs your modem to dial the service (you may have to click **Connect** to begin dialing), the connection is made, and the message is sent.

Sending Data Files

To send a data file as an enclosure to a message, choose the **File** command on the Insert menu or click the **Insert File** tool button (the one with the paper-clip icon) to open the Insert File dialog box shown in Figure 12.33.

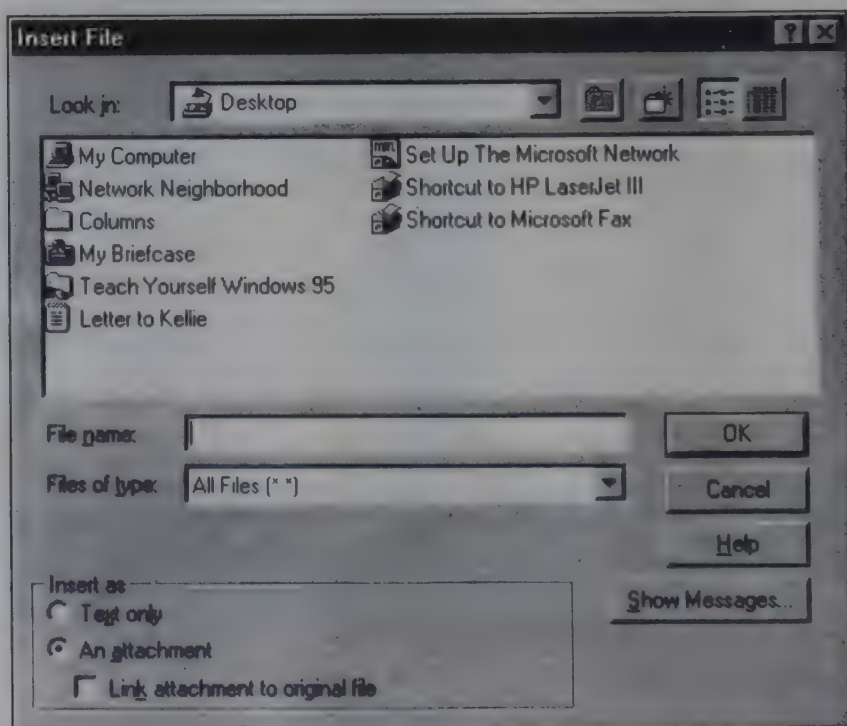


Figure 12.33 The Insert File dialog box.

Use the browser in the Insert File dialog box to find the file. Select the file to send and click **OK**. Figure 12.34 shows a message ready to send with an inserted file.

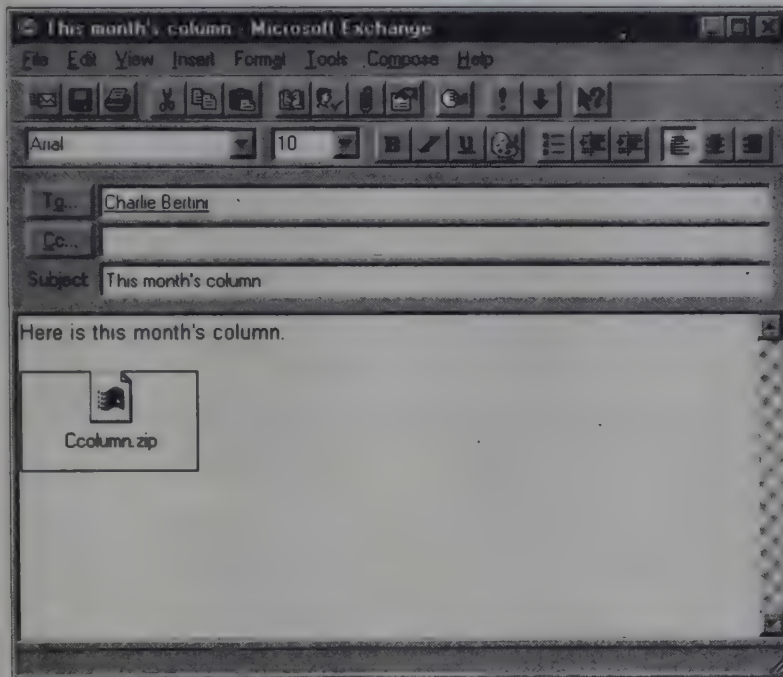


Figure 12.34 Mail with an inserted file.

If Charlie is on your network, click the **Send** tool button to send the file to him. If Charlie is on another stand-alone system across town (or in another state), you need to first click **Send**. Then open the Tools menu, click the **Deliver Now** command, and choose the service you want to use to deliver the file. The file can be any kind of data file. Charlie will see the message just as it appears in Figure 12.34. He can drag it to the desktop or to a folder. If the enclosure is a document file that Charlie's Windows 95 installation associates with an application, he can double-click its icon directly in the message and launch the application.

Reading Mail Messages

Figure 12.30 shows the Inbox with two messages already there. You might wonder how you got these messages. Microsoft sends one of them to you when you install Microsoft Mail and the other when you install Microsoft Fax. The one from SprintFAX Service is a blatant advertisement—ignore it for the moment. The other message is a friendly note from Microsoft telling you how

wonderful Microsoft Mail is. You can read it by double-clicking the entry. Rather than do that, we'll have Charlie send Judy a message about the family reunion. When that message arrives, we'll double-click it to read it.

If Microsoft Exchange is running, you can tell when new mail comes into your Inbox: A small envelope icon appears on the Taskbar next to the time of day indicator. If you are testing Microsoft Mail and sending messages between computers, don't expect the messages to arrive as soon as you send them. Microsoft Mail polls the postoffice for new mail infrequently so that it does not burden the system with network communications and disk accesses. You can set the interval by double-clicking the **Mail and Fax** icon in the Control Panel to open the MS Exchange Settings Properties dialog box. Select the **Services** page, select the **Microsoft Mail** service, and click the **Properties** button to open the Microsoft Mail dialog box. Open the **Delivery** page and set the interval in the numerical text box labeled **Check for new mail every**. The interval is expressed in minutes.

If you installed the NetBIOS protocol in your computer and in the computer that has the postoffice, you can use the same dialog box to choose to be notified immediately when new mail arrives.

You read a message in the Inbox by double-clicking the message entry or by selecting the message and choosing the **Open** command on the File menu. This action opens the message file and displays it in the Microsoft Exchange application, as shown in Figure 12.35.

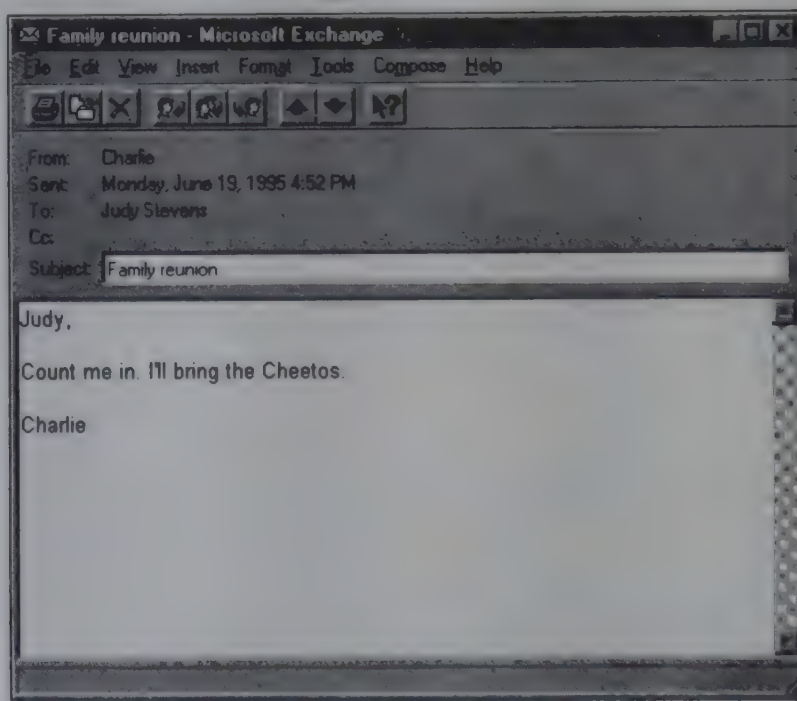


Figure 12.35 Reading a mail message.

Replying to Mail

You can reply to a mail message when you read it. Choose the **Reply to Sender** command on the Compose menu or click the **Reply** tool button, which is the leftmost button in the group of three that have face icons. That action opens the reply message shown in Figure 12.36.

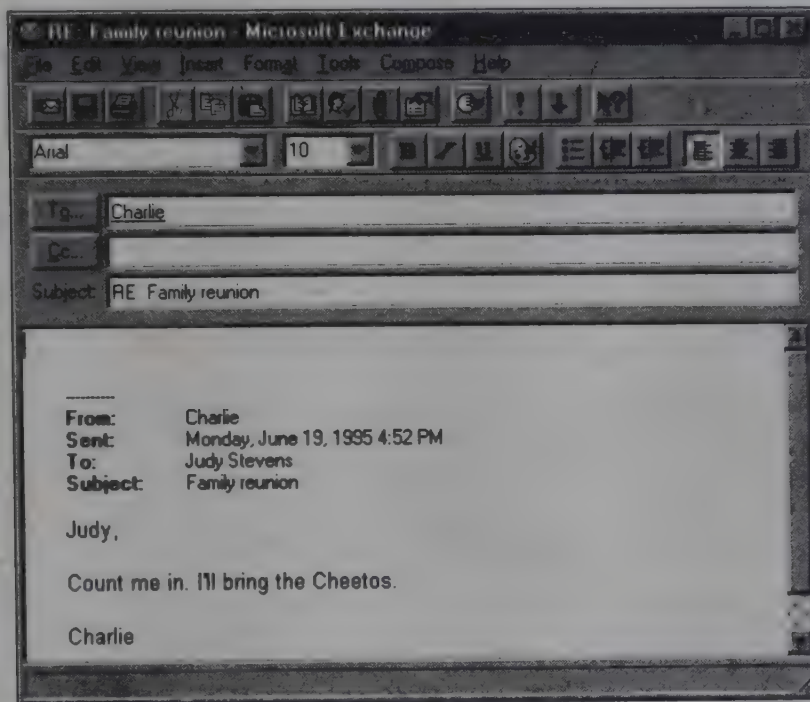


Figure 12.36 Replying to a message.

The text of the original message is copied into your reply for two reasons. First, you can refer to it when you compose your reply. Second, some senders send many mail messages every day. Including the text of the original message reminds them of the subject matter to which the reply relates.

The **Reply to All** command on the Compose menu sends the reply to the message's sender and to everyone who received the message. The **Reply to All** tool button is the middle button in the group of three with face icons.

Forwarding Mail Messages

You can forward a mail message to other recipients by choosing the **Forward** command on the Compose menu or by clicking the **Forward** tool button, which is the rightmost button in the group of three with face icons. This action opens the forwarding message shown in Figure 12.37.

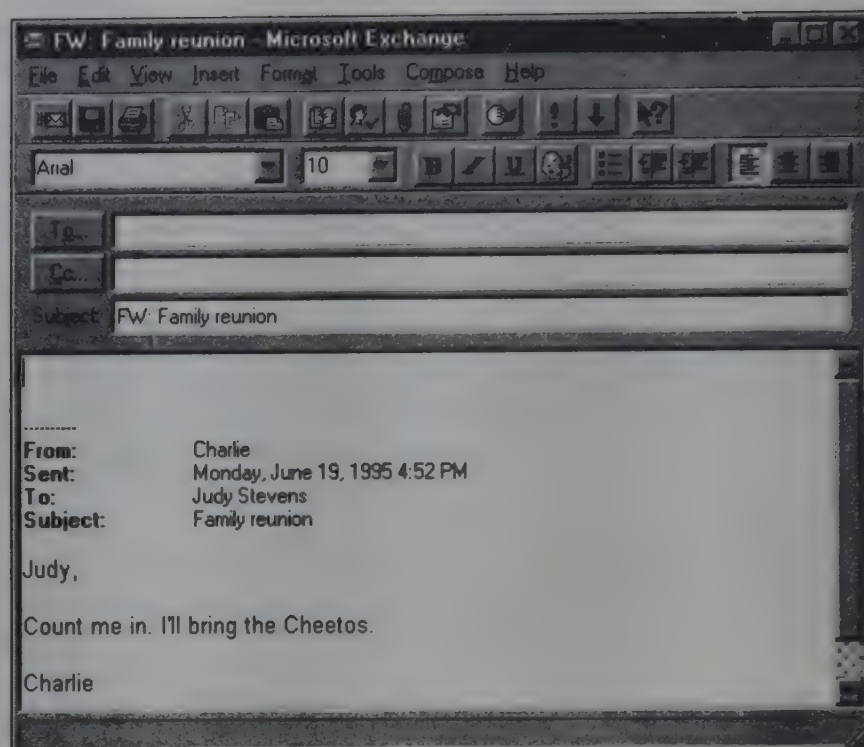


Figure 12.37 Forwarding a message.

A forwarded message needs a recipient. Use the same procedure that you used earlier for the new message.

MANAGING MAIL MESSAGES

Mail management involves the orderly storage of your mail in folders. Microsoft Mail maintains a set of personal folders for each user. Some of the folders are used by the mail system to hold incoming and outgoing messages, deleted messages, and copies of messages that you sent in the past. Other folders are added by you to provide individual folders for specific groups of mail.

To view a list of folders, choose the **Folders** toggle command on the View menu or click the **Show/Hide Folder List** tool button (second button from the left end of the toolbar). When you click that button, it stays pushed in until you click it again. Figure 12.38 shows the Microsoft Exchange application with the **Folder List** in view. *Note:* If you have downloaded the Exchange update from Microsoft Web site, the icon at the top of the **Folder list** says **Windows Messaging**.

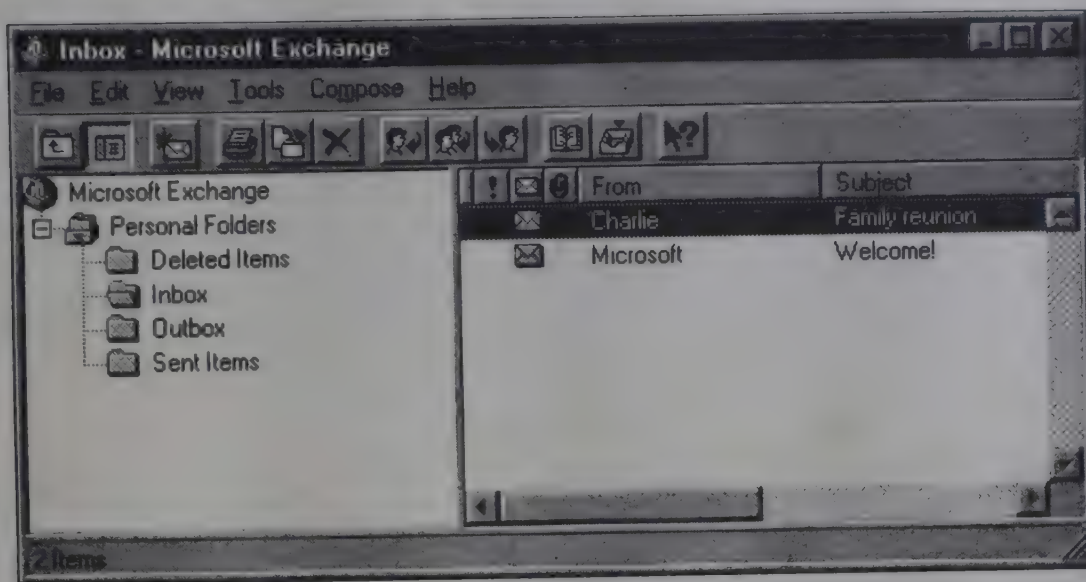


Figure 12.38 The Folder List in view.

You can view the contents of a different folder by clicking its icon in the **Folder List**. You can toggle off the Folder List view while viewing any folder. The **Inbox** tool button (second from the right) is a shortcut back to the Inbox from any other folder view.

Inbox

The Inbox folder is the one that you view when you start Microsoft Exchange by clicking the **Inbox** icon on the desktop.

The Inbox contains messages that you have received. The messages remain in the Inbox until you dispose of them either by deleting them or by moving them to other folders.

Sent Items

In the Sent Items folder, Microsoft Exchange automatically saves a copy of every message you send. You can turn this feature off by choosing the **Options** command on the Tools menu. Select the **Send** page of the Options dialog box and turn off the checkbox labeled **Save a copy**.

Deleted Items

Whenever you delete a message from any other folder, Microsoft Exchange copies it to the Deleted Items folder. When you delete messages from the Deleted Items folder, they are permanently deleted. You can instruct Microsoft Exchange to automatically empty the Deleted Items folder when you terminate the application. Choose the Options command on the Tools menu. Select the **General** page of the Options dialog box and turn on the checkbox labeled **Empty the Deleted Items folder upon exiting**.

Outbox

The Outbox contains messages that you have composed and sent. Messages don't stay in the Outbox very long when the computer containing the postoffice is logged on to the network. You can open the Outbox and watch outgoing messages appear briefly in the Outbox and then disappear as they are sent to the postoffice to be delivered.

Messages remain in the Outbox when the postoffice computer is off-line. If you are creating messages off-line or perhaps composing messages on a laptop that you connect only intermittently, the messages you send are stored in the Outbox until you log on to the service you use to deliver the mail. While the postoffice computer remains off-line, you can send mail messages only to recipients in your Personal Address Book. The Postoffice Address List is not available to you until the postoffice computer comes on-line.

As soon as the postoffice computer comes on-line, all messages are removed from your Outbox and copied to the postoffice.

Creating Personal Folders

You can add your own folders to the list of Personal Folders. Open the **Personal Folders** list and select where you want the folder to go. If you want it at the same level as the system folders, select the **Personal Folders** entry on the tree in the **Personal Folders** list. You can also put folders in other folders by selecting an existing folder to contain the new folder.

Choose the **New Folder** command on the File menu to open the New Folder dialog box shown in Figure 12.39.



Figure 12.39 The New Folder dialog box.

Type a name for the new folder and click **OK**. The **Folder List** in Figure 12.38 expands to add the new folder. The new folder is empty at first, but you can move messages into it from other folders.

You manage your mail by adding folders. As mail comes into your Inbox related to many different subjects, you can file the messages into subject-related folders that you create. Figure 12.40 shows the Folder List view with folders added.

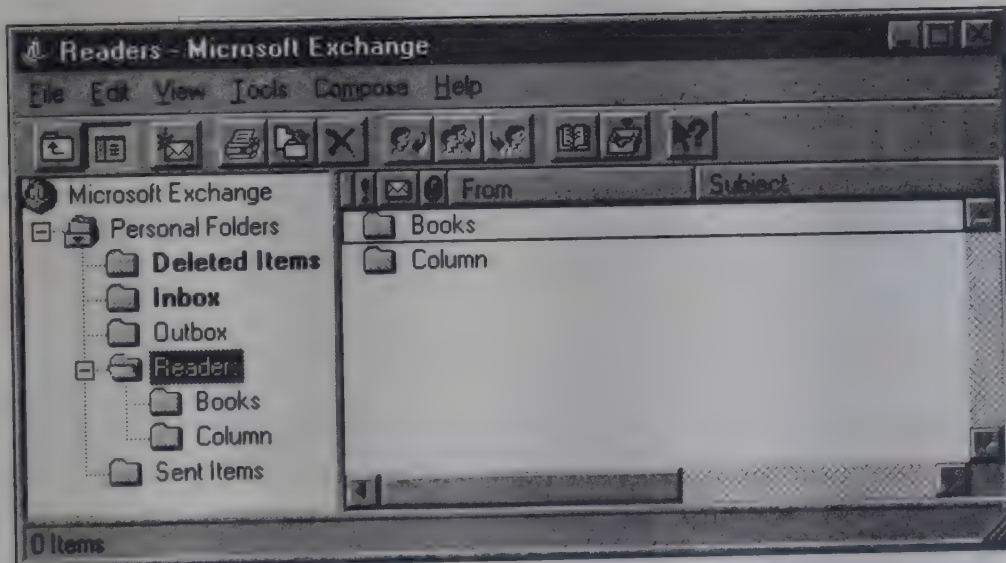


Figure 12.40 Folders added.

Moving and Copying Messages

The easiest way to move messages from one folder to another is to open the Folder List view, open the folder where the messages currently reside, select the messages to move, and drag and drop them to the destination folder in

the **Folder List**. To copy the messages instead of moving them, hold the **Ctrl** key down while you drag and drop the messages.

You can move and copy by right-clicking a message and choosing the **Move** or **Copy** command from the right-click menu. The File menu has **Move** and **Copy** commands, too, and they operate on messages selected in the current folder. These commands open Move and Copy dialog boxes that let you choose a destination from a tree display of the folders. Figure 12.41 shows the Move dialog box with the tree expanded and a destination folder selected.

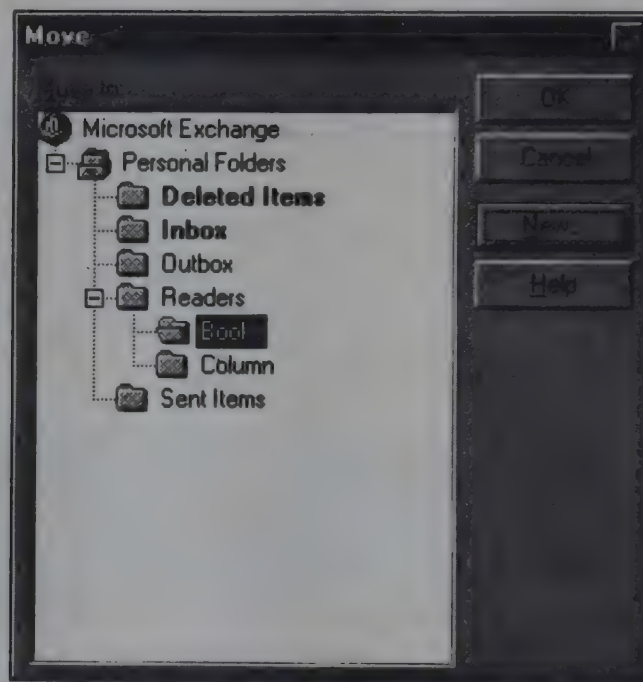


Figure 12.41 The Move dialog box.

The Copy dialog box looks just like the Move dialog box except for its title. The Move and Copy dialog boxes each have a **New** command button that opens the New Folder dialog box shown in Figure 12.39. The **New** button allows you to create a folder on the fly before you move or copy the selected messages. The folder is built into the folder selected in the Move or Copy dialog box.

Sorting Messages

Figure 12.42 shows the Microsoft Exchange application window resized to show all the fields in a message entry.

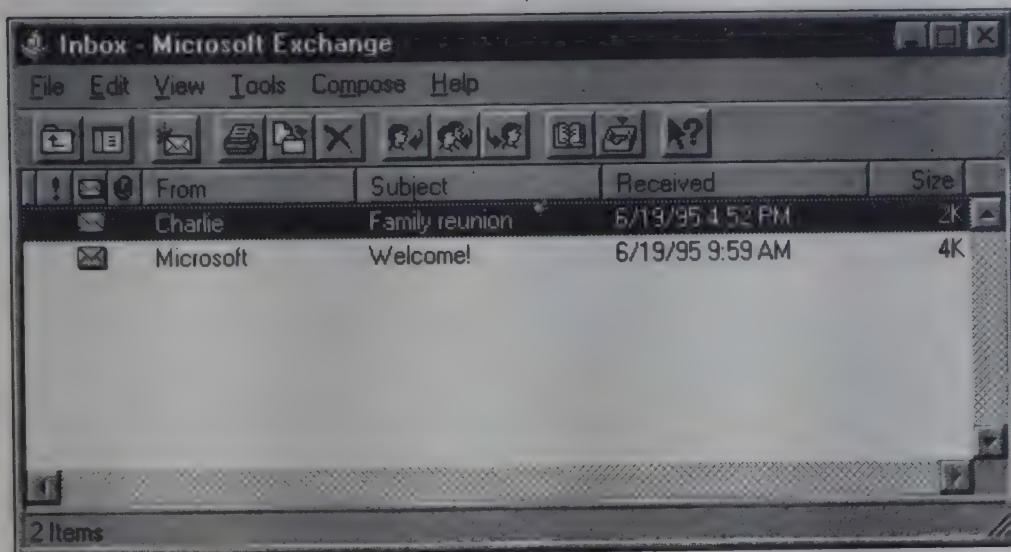


Figure 12.42 Message entry fields.

You can sort the messages in a folder by clicking the button just above the field columns. The edges of the buttons are sizable. You can drag one of them to the right or left to change the size of the column.

You can also sort by choosing the **Sort** command on the View menu to open the Sort dialog box shown in Figure 12.43.

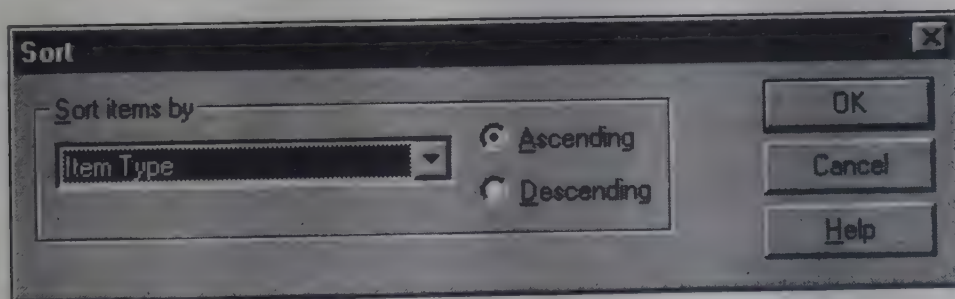


Figure 12.43 The Sort dialog box.

Select a field to sort by and click one of the radio buttons to set the sort order. Click **OK** to establish the new sort order.

To change which columns are displayed in the message entry, choose the **Columns** command on the View menu to open the Columns dialog box shown in Figure 12.44.

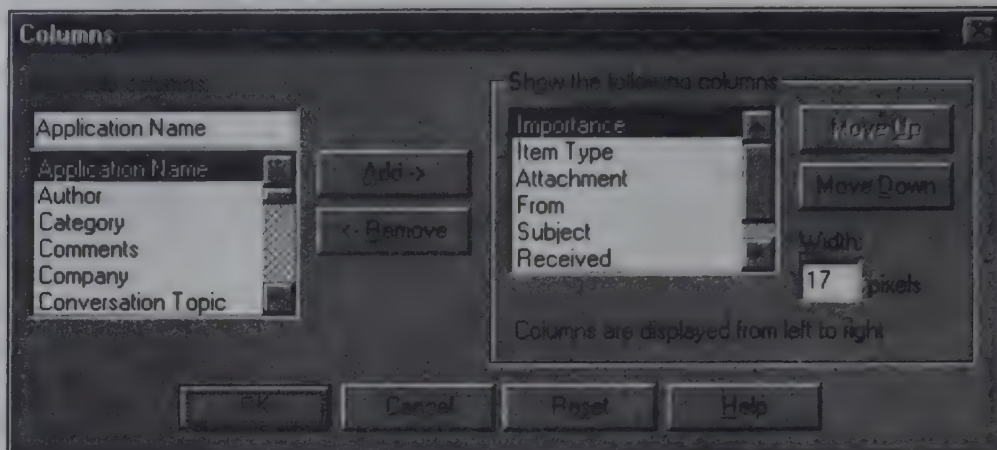


Figure 12.44 The Columns dialog box.

The list on the left shows the available columns. The list on the right shows the columns that are currently displayed. Use the **Add** and **Remove** buttons to change the columns that are displayed. Use the **Move Up** and **Move Down** buttons to change the order in which the columns are presented.

Deleting Messages

Delete a message from a folder in one of three ways: by selecting the message and pressing **Del**, by choosing the **Delete** command on the File menu, or by clicking the **Delete** tool button (the one with the scrawled X).

Deleted messages are moved to the Deleted Items folder. When you delete messages from the Deleted Items folder, they are permanently deleted.

Searching for Messages

You can search your folders for messages by using many complex search criteria. Choose the **Find** command on the Tools menu to open the Find application shown in Figure 12.45.

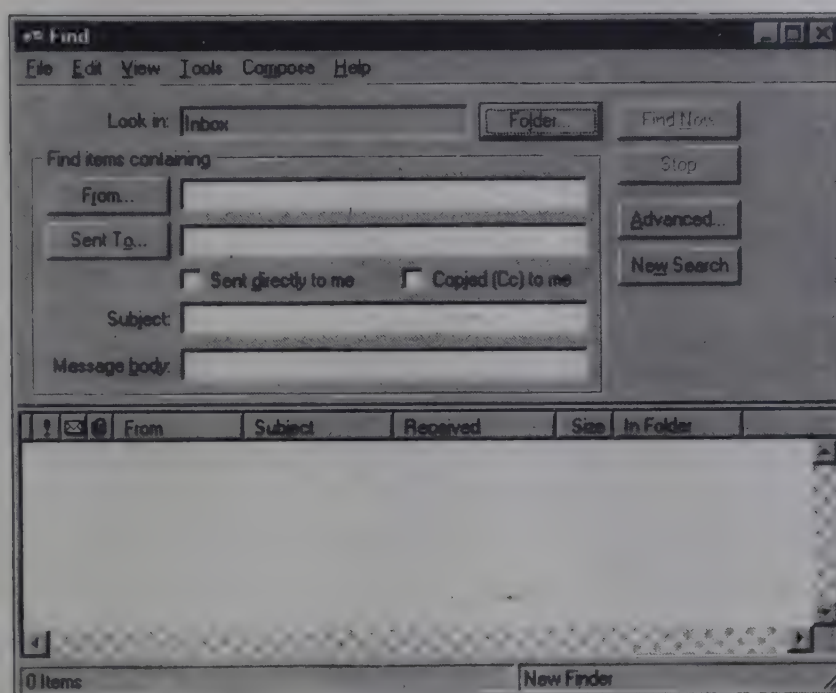


Figure 12.45 The Find application.

Click the **Folder** button to specify the range of your search. You can search individual folders or all folders in the Personal Folder set. Your search criteria can be based on sender, recipients, and text in the subject and message body. The **Advanced** button allows you to specify messages that fall within size and date ranges, are of specified importance, have attachments, have not been read, and so on.

Click **Find Now** to launch the search. Found messages are listed at the bottom of the Find application window. You can work with these messages directly from that list, or you can note which folder they were found in and go there to work with the messages.

When you close the Find application, the list of found messages is cleared.

ADMINISTERING A POSTOFFICE

If you are working on a network, before there can be mail, there must be a postoffice. One person in the workgroup is appointed the postoffice administrator, and that person sets up and manages the postoffice.

Setting Up a Postoffice

To establish a postoffice, click the Control Panel's **Microsoft Mail Postoffice** icon. This action opens the Microsoft Workgroup Postoffice Admin wizard shown in Figure 12.46. (*Note.* If you are a user on an office network, do **not** create your own postoffice without consulting your network administrator.)

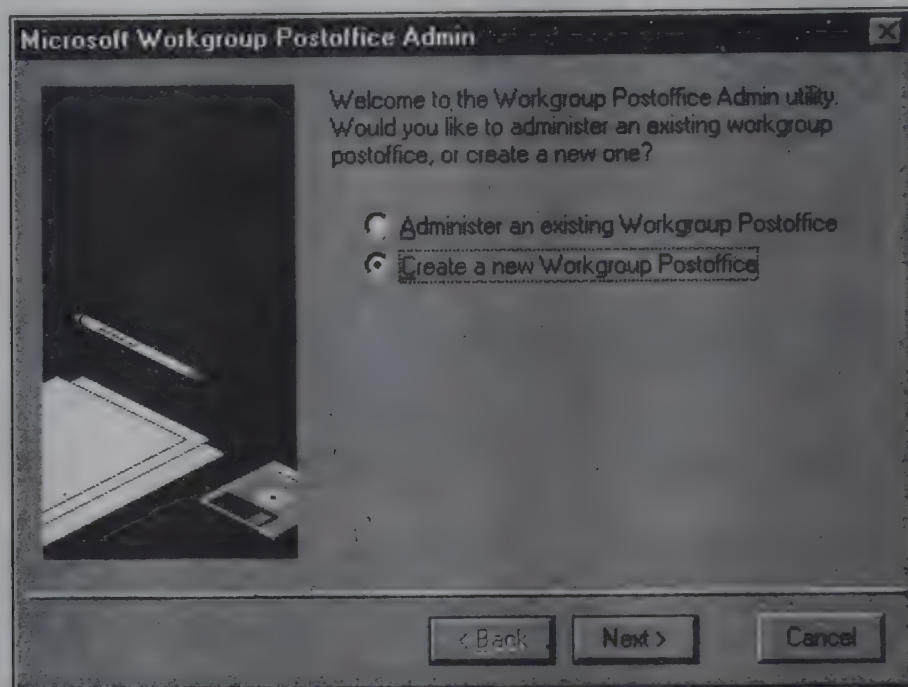


Figure 12.46 The Microsoft Workgroup Postoffice Admin wizard.

Select the **Create** radio button and click **Next** to move to the next step in the wizard, as shown in Figure 12.47.

The location you specify must be in an existing location—that is, the folder or subdirectory must have been created. The wizard will create a folder in the location that you specify, so you can specify the desktop, an existing folder, or even the root directory of one of your hard disk drives. Use the **Browse** button to find a location. This example uses the root directory of the D: drive, so you enter **D:** in the **Postoffice Location** text box control and click **Next**. The wizard now gives you the information shown in Figure 12.48.

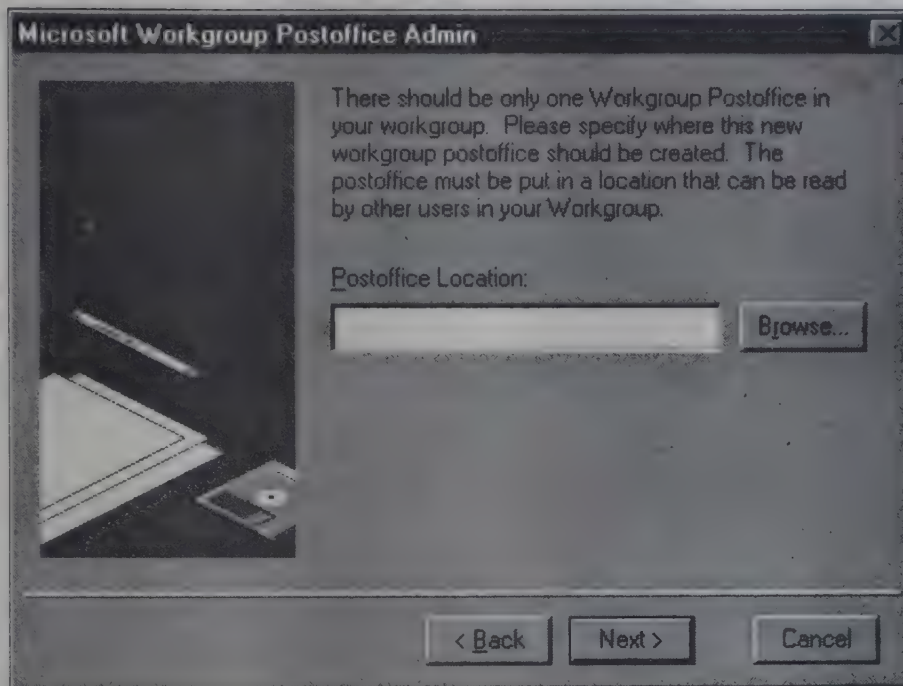


Figure 12.47 Specifying a postoffice location.

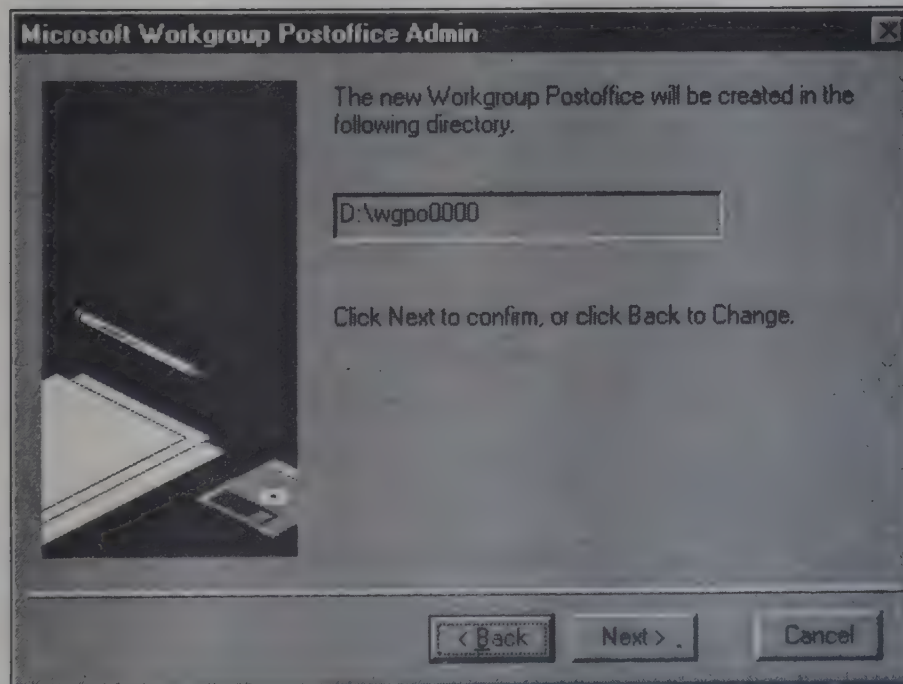


Figure 12.48 The postoffice location.

Remember the postoffice's drive and directory—you will need it later to administer the postoffice. Click **Next**, and the wizard opens the dialog box shown in Figure 12.49.

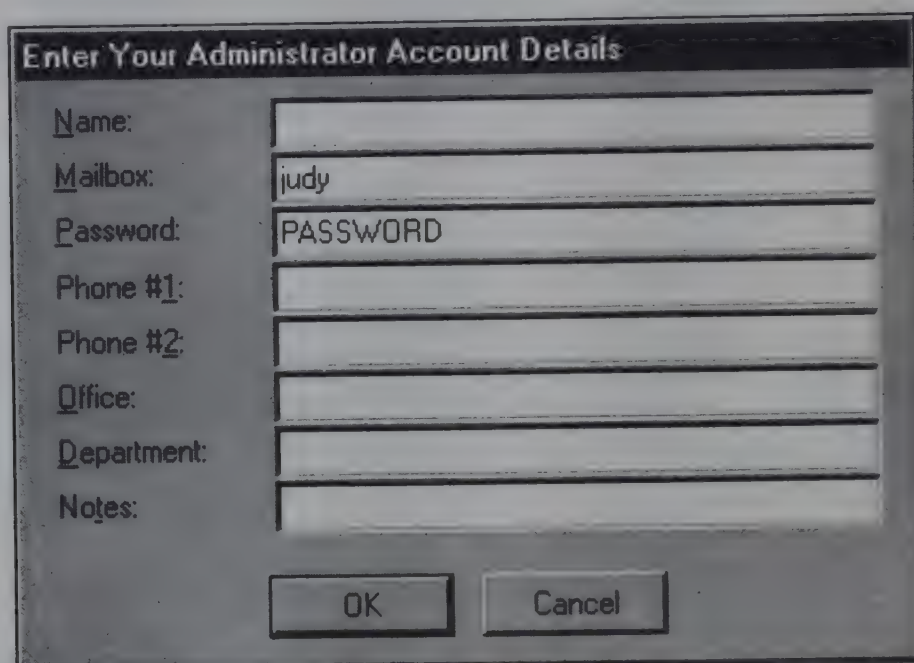
A screenshot of a Windows-style dialog box titled "Enter Your Administrator Account Details". The dialog box contains several text input fields. The "Name:" field is empty. The "Mailbox:" field contains the text "judy". The "Password:" field contains the text "PASSWORD". The "Phone #1:" field is empty. The "Phone #2:" field is empty. The "Office:" field is empty. The "Department:" field is empty. The "Notes:" field is empty. At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

Figure 12.49 The Administrator Account Details dialog box.

Enter your name in the **Name** field. Enter a password in the **Password** field. This item is important: It enables you to protect the postoffice from inadvertent or malicious tampering. The other information on the dialog box is notational and not required. Click **OK**.

To enable user access to the postoffice, it must be fully shared. Open the Explorer and find the folder named **wgpo0000** on the **D:** drive. Right-click the folder and choose **Sharing** on the right-click menu. Choose **Shared As** and enter a name in the **Share Name** control.

Make a note of the name you assign. When users ask you where the postoffice is, you must give them the name of your computer on the network and the name of the postoffice. Return to Figure 12.16, which is where you went looking for a postoffice to use. In that exercise, you were a postoffice user, and the postoffice administrator named the postoffice after its folder, **wgpo0000**. In this exercise, you are the administrator, and you can name the postoffice anything you like.

Choose the **Full** radio button. Postoffice users need to read and write mail message files in the postoffice, and that requires full access. You can assign passwords if you want to.

Adding and Deleting Postoffice Users

Look back at Figure 12.18, where, as a new postal user, you went looking for your mailbox. If the postoffice administrator had not yet added your name to the postoffice, you had to ask to be added. Now, as the postoffice administrator, you can add and delete names to the postoffice.

To maintain the postoffice, click the Control Panel's **Microsoft Mail Postoffice** icon and open again the Microsoft Workgroup Postoffice Admin wizard shown in Figure 12.46. Select the radio button labeled **Administer an existing Workgroup Postoffice**. Once again, you must specify the postoffice name, but this time you need to specify one that exists. Usually, the wizard has filled in the most recently used name and you can proceed. If it has not, Figure 12.48 told you what you need to know. Enter that drive and directory and click **Next**. Enter your password and click **Next** to open the Postoffice Manager dialog box shown in Figure 12.50.

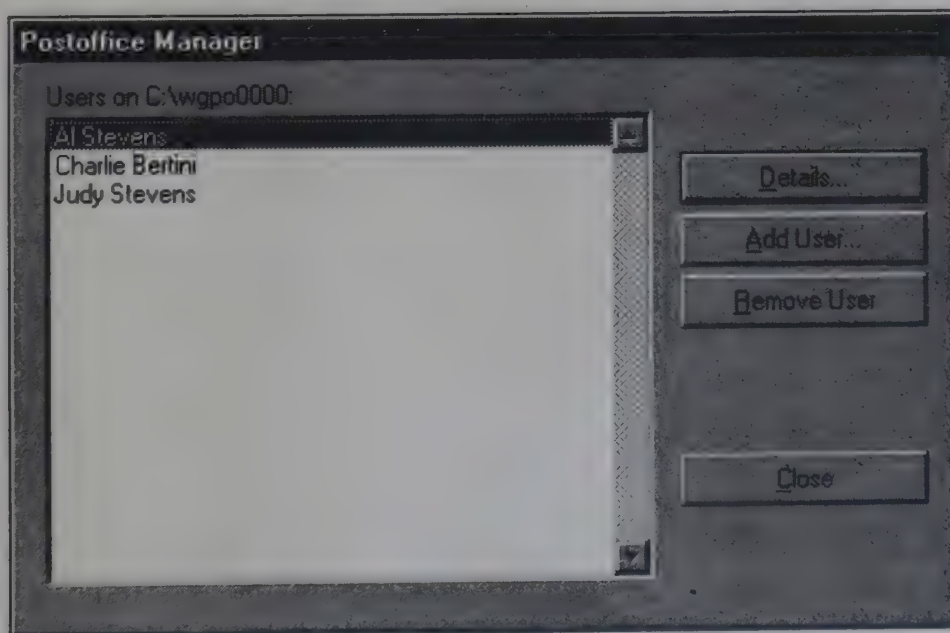


Figure 12.50 The Postoffice Manager dialog box.

You can delete a user by clicking the **Remove User** button. You can modify the details of someone's mailbox by clicking **Details**. To add a user, click **Add User**. This action opens the Add User dialog box shown in Figure 12.51.

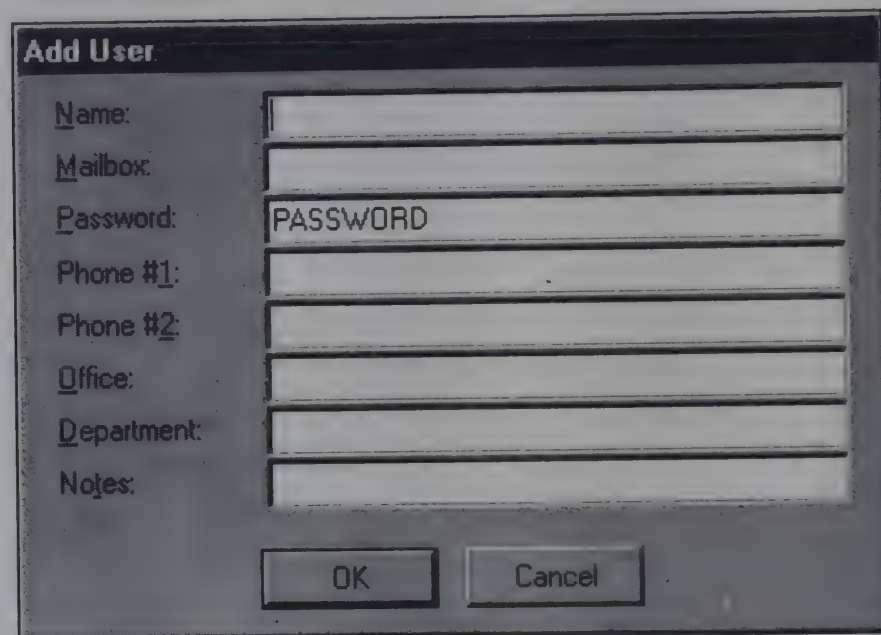
The image shows a 'Add User' dialog box with a title bar. It contains several text input fields with labels to their left: 'Name:', 'Mailbox:', 'Password:', 'Phone #1:', 'Phone #2:', 'Office:', 'Department:', and 'Notes:'. The 'Password:' field is pre-filled with the text 'PASSWORD'. At the bottom of the dialog box are two buttons: 'OK' and 'Cancel'.

Figure 12.51 The Add User dialog box.

Enter the person's name and assign a name to the mailbox. Provide a password and tell the user what it is. Click **OK**, and the user can now use Microsoft Mail.



CHAPTER 13

Multimedia

Windows 95 includes extensive support for multimedia devices—sound, music, video, and recording. Many applications and games take advantage of these features to add multimedia enhancements to their operations.

New PCs sold today with Windows 95 installed are able to take advantage of the latest in multimedia technology, including features such as DirectX 2.0, Direct 3D, ActiveMovie, and Intel's MMX support. All these features enhance the quality and speed of graphics, sound, input, and more. Several of these enhancements are available at Microsoft's Web site.

To use programs that rely on multimedia, you must have the necessary devices installed and properly configured. Windows 95 includes applications that record and play back multimedia files. In this chapter you will learn about:

- Installing multimedia devices
- Playback
- Recording
- Using sound

INSTALLING MULTIMEDIA DEVICES

To install multimedia devices, double-click the **Add New Hardware** icon on the Control Panel. Try first to let Windows 95 detect your devices. If that does not work, use the wizard to specify the devices that you have. As with all hardware, if the adapters use configurable IRQs, DMA channels, I/O ports, and buffer memory addresses, you must determine that the settings do not conflict with other installed devices. If Windows 95 is not able to sense the settings, you must set these parameters yourself.

If you installed Windows 95 over Windows 3.1, there is a good chance that all your multimedia devices have been installed into Windows 95 properly. But it's only a good chance and not a guarantee. There are sound cards, scanners, and CD-ROM drives that do not yet have Windows 95 drivers. (Remember you can find the latest drivers on-line in the Windows 95 Drivers Library). You can make them work in some cases by installing the 16-bit drivers from Windows 3.1, but these installations are tricky and require instructions from someone who has been through it. It has been my experience that the device manufacturers are less than helpful. They say simply that Microsoft will provide the drivers, while, at the same time, Microsoft refers you to the manufacturers for support. You may be able to find the drivers you need on-line in one of the multi-media forums.

I won't provide screen shots here because you have been through hardware installation in other chapters and because the screen settings vary among devices from different manufacturers. If the following exercises do not work, then your multimedia devices are not properly installed and configured.

MEDIA PLAYER

Media Player is an application on the Accessories/Multimedia menu. It can play video clips, sound effects, MIDI songs, and musical compact discs from your CD-ROM drive. Figure 13.1 shows the Media Player application.

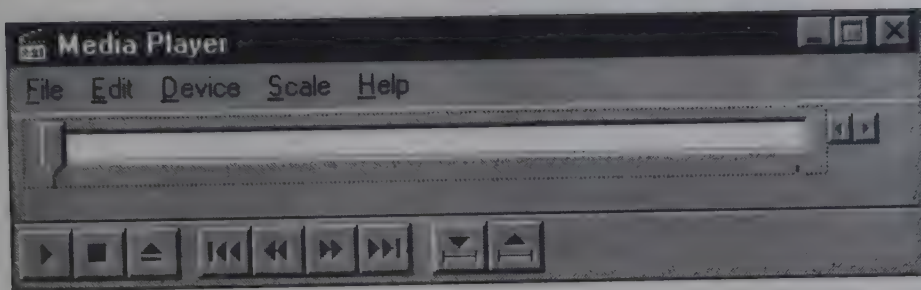


Figure 13.1 Media Player.

You can launch Media Player from the Start menu's Programs/Accessories/Multimedia menu or by double-clicking a media file. When you double-click a media file, Media Player launches itself and plays the file. When the playback is complete, Media Player terminates.

When you launch it from the menu, Media Player opens with the screen shown in Figure 13.1. To play something back, first you must select a playback device from the Device menu. The selections are **Video for Windows**, **Sound**, **MIDI Sequencer**, and **CD Audio**. If your system has no sound card, only **Video for Windows** is available. If your system has no CD-ROM drive, **CD Audio** is not available. If the MIDI drivers are not installed, the **MIDI Sequencer** is not available. If another application—even another running copy of Media Player—is using a particular device, that device does not show on the Device menu. The Device menu adjusts itself according to what is available.

Media Player is, then, a good initial test to see whether your sound card is properly installed. If only **Video for Windows** shows up, either the system does not recognize your sound card or you do not have one.

Video for Windows

Choosing the **Video for Windows** command on the Device menu opens a standard Windows 95 Open dialog box where you can browse to find a video file to play. Video files have the .AVI file name extension. The Windows 95 CD-ROM includes several video clips. Figure 13.2 shows the Open dialog box after browsing to find them.

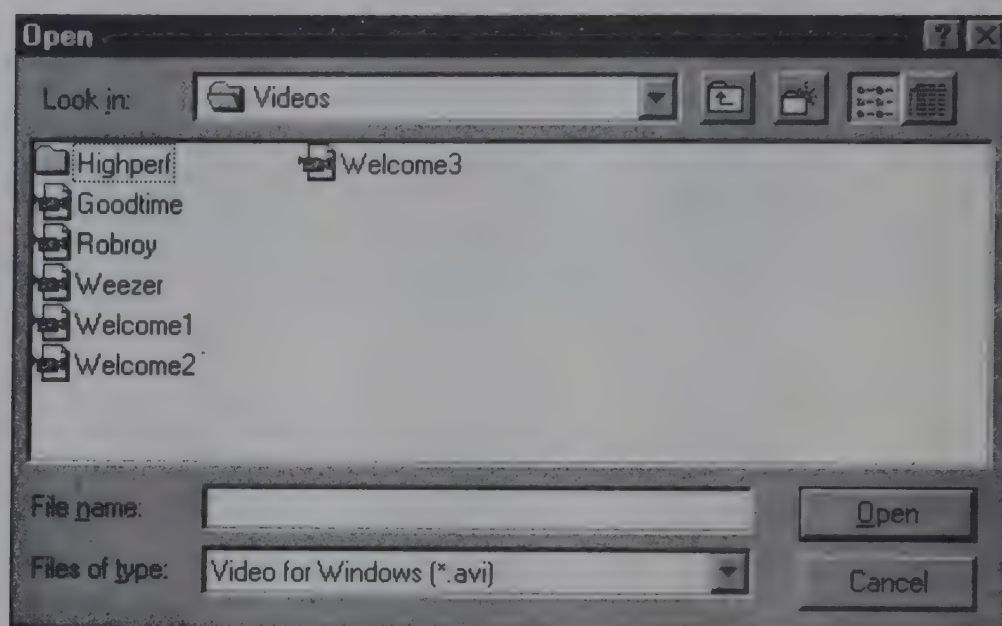


Figure 13.2 Browsing for video clips.

These video clips also have sound built into them, so they can test your sound card installation. Select one of them and click **Open**. Media Player loads the file, and the Video for Windows display window opens, ready to play back the video clip. Click the **Play** button, the one at the left end with the right-pointing arrow. Figure 13.3 shows Media Player playing a video clip.

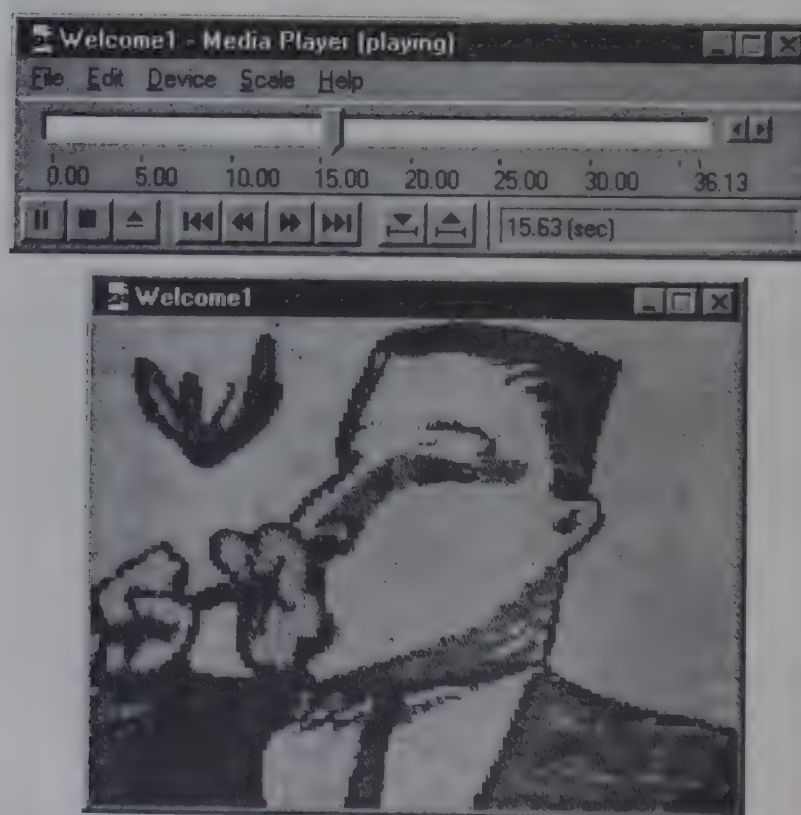


Figure 13.3 Playing a video clip.

The Scale menu lets you change the scale displayed on the front of the Media Player between time and frames. You can drag the sliding pointer control back and forth to view individual frames. The **Play** button changes into a **Pause/Resume** button during playback. The **Properties** command on the Device menu lets you change the size of the playback window up to the complete screen size.

ActiveMovie is now available for downloading from Microsoft's Web site. ActiveMovie, the latest video standard for Windows, enhances the quality and playback of video clips. It also supports the high-quality video formats such as QuickTime and MPEG-1. But don't count on every QuickTime file to play because this is not a Microsoft standard.

Playing Sound Effects

Choosing the Sound selection on Media Player's Device menu opens an Open dialog box where you can browse for sound files, which have the .WAV file name extension. When you have found one, you can load it and play it back. Sound files are usually of short duration because they contain digitized recorded sound, which is a memory-intensive format. The **Properties** command on the Device menu lets you control the amount of memory that Media Player uses to buffer sound files. If a sound file is breaking up, allocating more memory for it might make it play back more clearly.

MIDI Songs

Choosing the **MIDI Sequencer** selection on Media Player's Device menu opens an Open dialog box where you can browse for MIDI song files, which have the .MID filename extension. When you have found one, you can load it and play it back. MIDI files usually play longer than sound files because MIDI files encode musical scores in small data packets instead of as digitized recorded sound. The **Properties** command on the Device menu lets you select whether to play the song through the internal MIDI system or through an external connection to a MIDI device.

CD Audio

The Media Player's Device menu includes a selection named **CD Audio** for playing music compact discs through the CD-ROM drive. It works just like the other playback functions in Media Player. You probably will never use the **CD**

Audio function, because Windows 95's CD Player accessory application does a far better job. We'll discuss that application next.

CD PLAYER

CD Player is an accessory application. It launches automatically when you put an audio compact disc in your CD-ROM drive. You can also launch CD Player from the Programs/Accessories/Multimedia menu. If your computer does not have a CD-ROM drive capable of audio playback, the menu selection does not appear. Figure 13.4 shows the CD Player application.

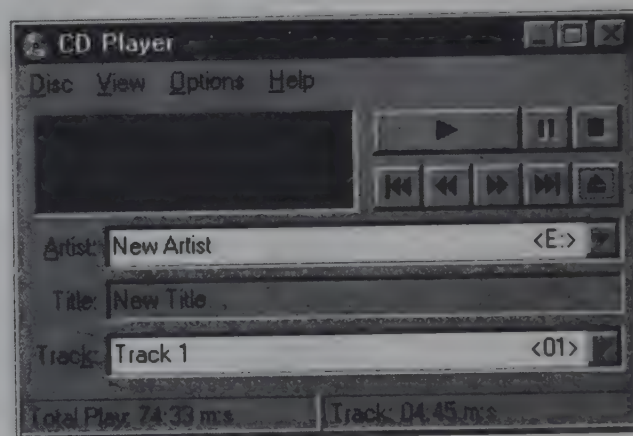


Figure 13.4 CD Player.

Programming an Audio Compact Disc

CD Player is not just a playback application; it also lets you store the names of your CDs, their artists, and the selections on each one. You can set the order in which the selections play, omitting selections if you wish. You can program CD Player to play the selections in random order.

The CD Player application automatically associates your settings with that particular compact disc. The next time you load the disc, the settings are restored. To program the contents of a disc, put the disc in the CD-ROM drive and choose the **Edit Play List** command on the Disc menu, which opens the Disc Settings dialog box shown in Figure 13.5.



Figure 13.5 The Disc Settings dialog box.

Enter the artist's name and the title of the CD. Use the **Set Name** button to select tracks. Enter the track's selection name in the text box control. Click **Set Name** each time.

Programming the Play List

Use the **Add** and **Remove** buttons to program the **Play List** from the entries in the **Available Tracks** list. Figure 13.6 shows a fully programmed compact disc. Figure 13.7 shows the CD Player playing a selection from that CD.

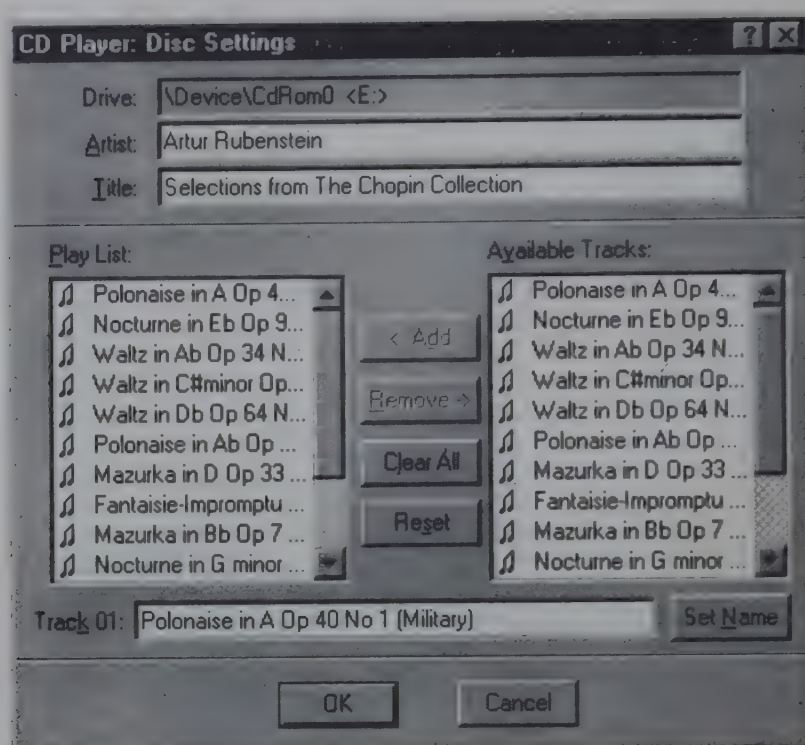


Figure 13.6 A programmed audio compact disc.

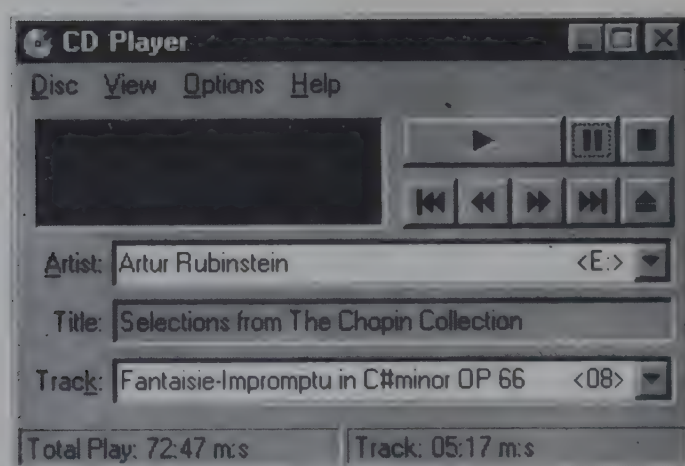


Figure 13.7 Playing a programmed disc.

VOLUME CONTROL

The **Volume Control** command on the Programs/Accessories/Multimedia menu opens the Volume Control dialog box shown in Figure 13.8. The columns shown in your Volume Control dialog box may differ depending on the capabilities of the sound card installed in your system.

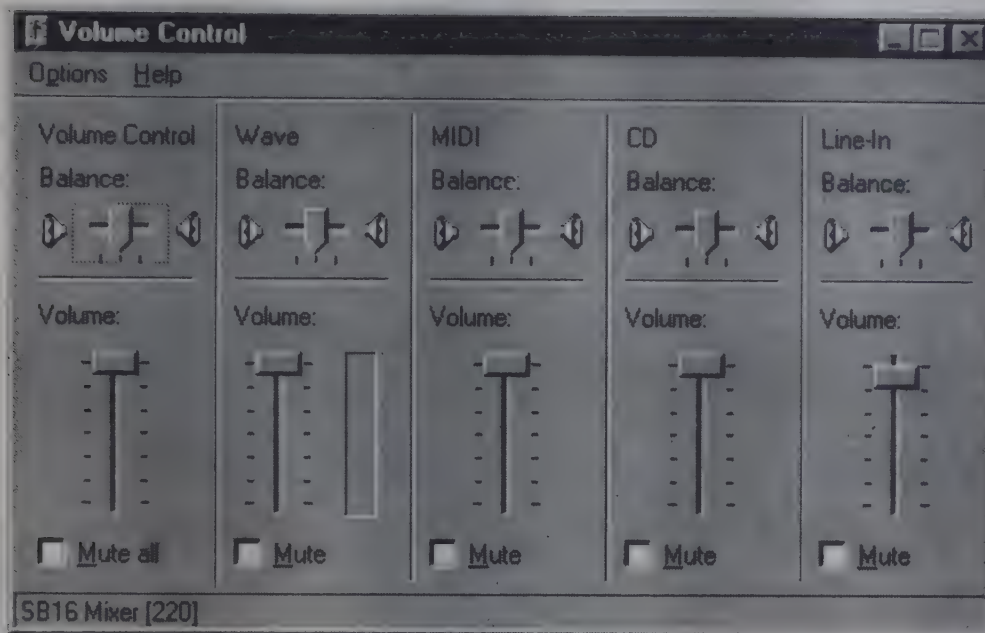


Figure 13.8 Volume Control dialog box.

Drag the Balance and Volume slider controls to change how your sound card plays back from its four input sources.

Advanced Volume Control

The Options menu includes an **Advanced** toggle command that adds an **Advanced** command button to the Volume Control dialog box. Clicking that button opens the Advanced Controls dialog box shown in Figure 13.9.

Drag the slider controls to change the bass and treble tones of the audio playback.

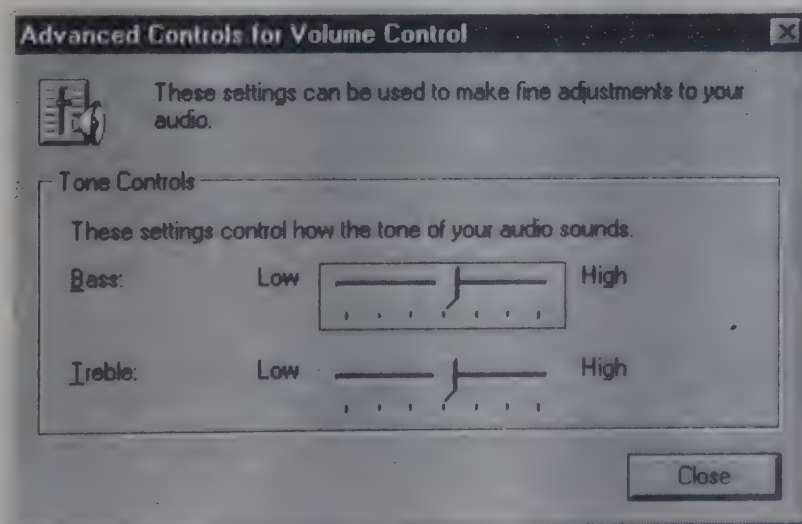


Figure 13.9 Advanced Controls for Volume Control.

Master Volume Control on the Taskbar

At the right end of the taskbar—just next to the time display, printer icon, and fax icon—is a small audio speaker icon. Click that icon, and a master volume control displays. Figure 13.10 shows that control.



Figure 13.10 Master volume control.

Move the slider control up and down to control the sound card's volume. Click anywhere off the volume control to close its window.

You can remove the taskbar's **Volume Control** icon by opening the **Multimedia** icon on the Control Panel, selecting the **Audio** page and turning off the checkbox labeled **Show volume control on the taskbar**.

SOUND RECORDER

The Sound Recorder application on the Programs/Accessories/Multimedia menu lets you record sound files (.WAV) from a microphone, line input if your sound card has a line input jack, and any of the other sound sources discussed in this chapter. Figure 13.11 shows the Sound Recorder application.

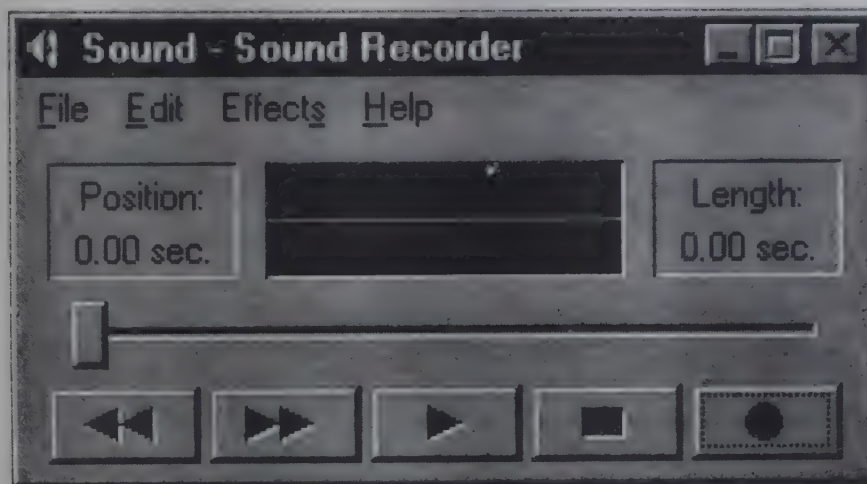


Figure 13.11 Sound Recorder.

Recording

To record from the microphone, a MIDI song, or CD Audio, click the **Record** button on Sound Recorder—the button with the round red icon—and speak into the microphone or play the sound. Figure 13.12 shows Sound Recorder recording a sound.

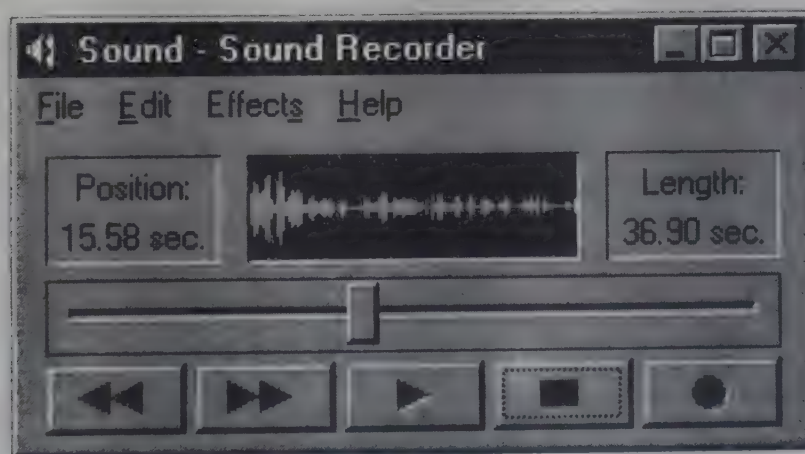


Figure 13.12 Recording.

Playback

Sound Recorder plays back the current sound file. Click **Play** (the center button). You can drag the slider switch back and forth to change the sound file's playback position.

Sound Files

A sound effect is a sound file with the file name extension .WAV. After you record a sound, you can save it by using the **Save** and **Save As** commands on the File menu. The Open command on the File menu lets you load an existing sound file.

Effects

You can add special effects to a sound file by using commands on the Effects menu. You can increase and decrease the signal strength to raise and lower the volume; you can increase and decrease the playback speed, which changes the pitch of the sound; you can add an echo effect; and you can reverse the signal so that it plays backward.

Edits

You can remove the beginning and end of a signal by using the **Delete** commands on the Edit menu. This feature allows you to remove dead signal space from the file. You can also mix the signal with that of another sound file and insert a sound file into the current one at the current position.

Controlling Recording Levels

Sound Recorder can mix input sources. You can run multiple copies of Media Player—one playing a MIDI file, one playing CD Audio, one playing a sound file, and one playing line input. Sound Recorder can mix all these sources. This feature allows you to record a voice message with music in the background, for example.

Mixing input sources involves independent level controls. The Properties command on the Volume Control application's Options menu switches the application to the Recording Control shown in Figure 13.13. You may see different columns in the Recording Control dialog box, depending on the options your sound card supports.



Figure 13.13 Recording Control.

The slider switches independently control levels for each of the input sources. The **Select** checkboxes enable each of the sources. Turn a **Select** checkbox off to mute the source. You will still hear the signal, but it isn't being recorded.

Recording Length and Quality

Sound Recorder records sound clips of limited length. It uses a fixed-length buffer for recorded data. The maximum length of a sound clip is determined by Sound Recorder's format and recording quality settings. Choose the **Audio Properties** command on the Edit menu and click the **Customize** button on the Audio Properties dialog box to open the Customize dialog box shown in Figure 13.14.

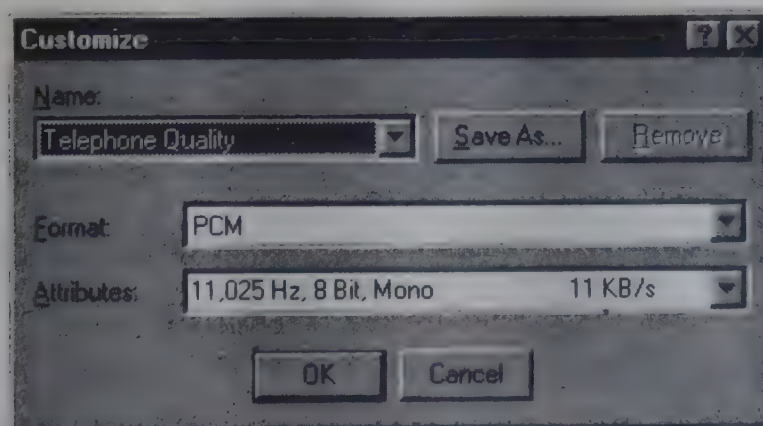


Figure 13.14 The Customize dialog box.

You can select from the CD, Radio, and Telephone quality settings or select a specific sampling rate and recording resolution from the **Attributes** drop-down list box. The lower the quality, the less storage is required for a signal of a specific length. For example, the attribute shown in Figure 13.14 uses the PCM (pulse-coded-modulation) format and records at a sampling rate of 11,025 samples per second with 8 bits of resolution. A signal recorded with these attributes uses 11 KB for each second in the signal.

PUTTING SOUNDS INTO DOCUMENTS

You can put a sound clip into a document if the application supports embedded objects. WordPad is such an application. Open the sound file with Sound Recorder, copy the file into the clipboard, and paste it into the document. You can send a document with a sound clip as a mail message. Figure 13.15 shows a document with an embedded sound clip.

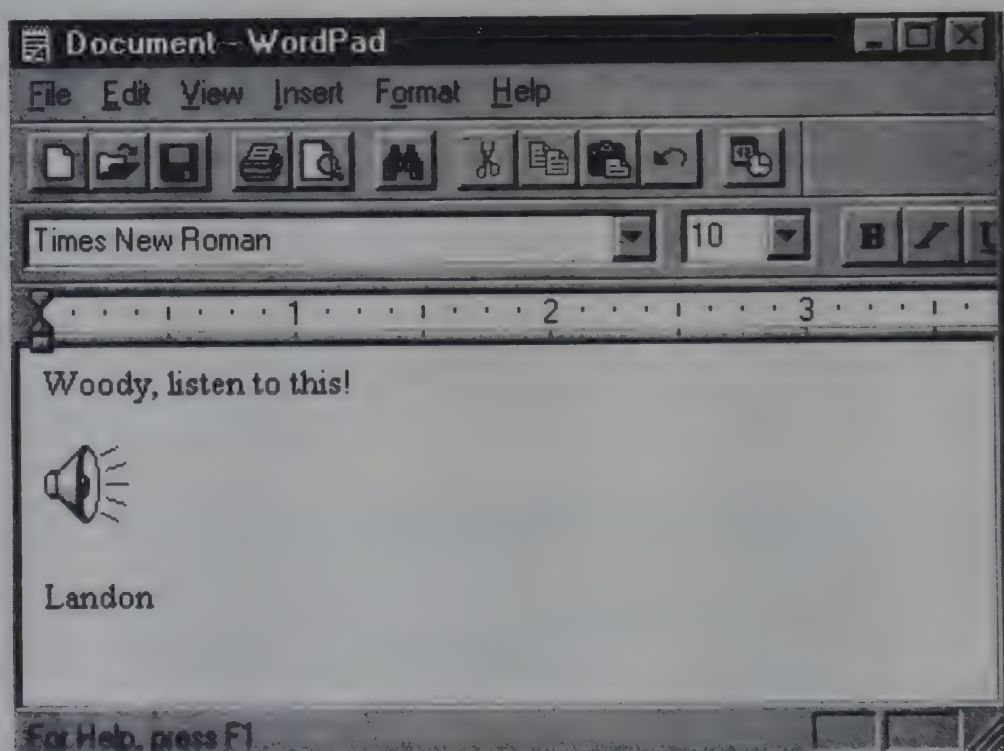


Figure 13.15 A document with a sound clip.

The reader of the document double-clicks the sound clip icon in the document, and the sound clip plays through the reader's sound card.

SYSTEM SOUNDS

Windows 95 has a set of system events. You can associate sound files with these events so that when a system event occurs, the sound clip calls your attention to the event. Double-click the **Sounds** icon on the Control Panel to open the Sounds Properties dialog box shown in Figure 13.16.

Select an event from the **Events** list. Select a sound from the **Sound** drop-down list box. You can browse your system for sounds. Click the **Play** button next to the **Preview** icon to hear the sound. When you have assigned the event sounds of your choice, click **OK**.

You can build sets of sound-to-event associations and record them as schemes by using the **Save As** button. Later, you can select a scheme from the **Schemes** drop-down list box.

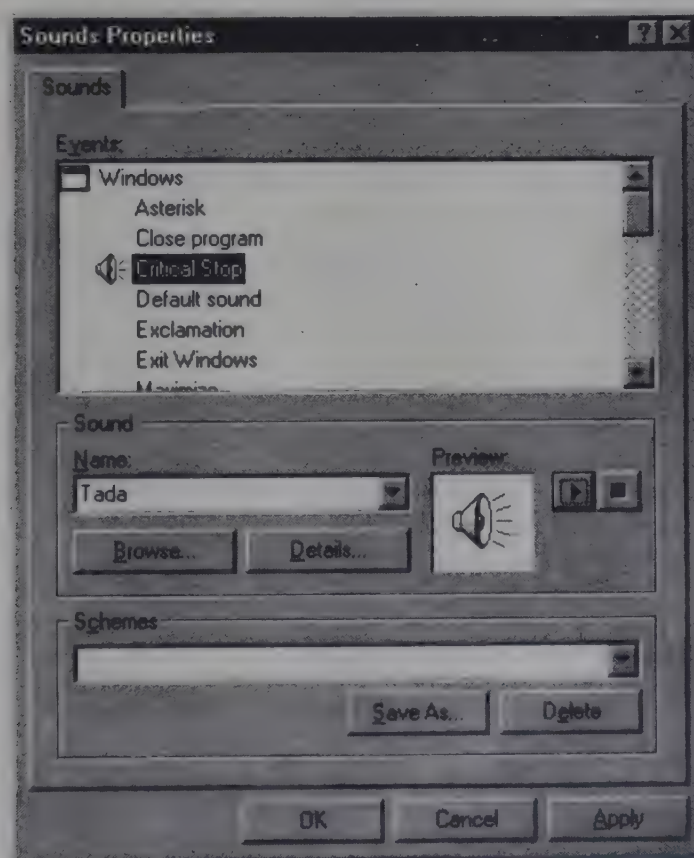


Figure 13.16 The Sounds Properties dialog box.



CHAPTER 14

On the Road

This chapter is about mobile computing—taking Windows 95 on the road. Many people work in two environments: in the office, where they use a permanent desktop system, and on the road, where a laptop provides portable computing. Windows 95 supports both environments and includes features that help coordinate the two.

You will learn about:

- Dial-Up Networking
- Direct Cable Connection
- The Briefcase

THE OFFICE AND THE ROAD

The discussions in this chapter refer to “the office” and “the road.” These terms are convenient even though they don’t describe precisely every situation where mobile computing applies. Let’s define what we mean by the office and the road.

The *office* in these discussions is where the fixed, desktop system is. Maybe that’s your office, and maybe that’s your home. We discuss the office’s network, but there might not a network at the office—just a computer that you need to access from the road.

The *road* that we discuss could refer to a business trip where you carry a laptop. The road could also be your computer at home where you sometimes do work away from the office. These terms are for convenience so that I don’t have to qualify at every turn what I am saying about these two environments.

THE ROAD: DIAL-UP NETWORKING

Just because you are on the road does not mean that you can’t log on to the office network. Windows 95 includes Dial-Up Networking, a feature that connects a road PC to the office network. Each PC needs a modem.

From the road you retrieve and update documents maintained at the office. From the road you send and receive electronic mail through the office post-office. You can even run applications that are installed on the office computer.

Since the original release of Windows 95, an enhancement has been made to Dial-Up Networking. Now you can use scripting features and hands-free dialup. Download the ISDN Accelerator Pack 1.1 from Microsoft’s Web site. The scripting features are also available to download separately from this site.

INSTALLING DIAL-UP NETWORKING

To use Dial-Up Networking you must install it in both the road and the office systems. You must have installed a modem on both systems, too. Double-click **Add/Remove Programs** on the Control Panel, select the **Windows Setup** page, select the **Communications** component, and click the **Details** button. If Dial-Up Networking is already checked, the feature was installed earlier. Click **Cancel** on both dialog boxes and proceed to the next discussion in this chapter.

If Dial-Up Networking has not been installed, check it and click **OK** in both dialog boxes. This procedure works well for Windows 95 dialup servers and Windows NT servers. All other servers will require additional configuration and users should consult their server administrator.

You need your Windows 95 installation CD-ROM inserted or the installation diskettes handy. The setup procedure copies files from the Windows disk. When it is finished copying, Dial-Up Networking is available on the Accessories menu and in the My Computer window.

The first time you run Dial-Up Networking, it opens the wizard shown in Figure 14.1.

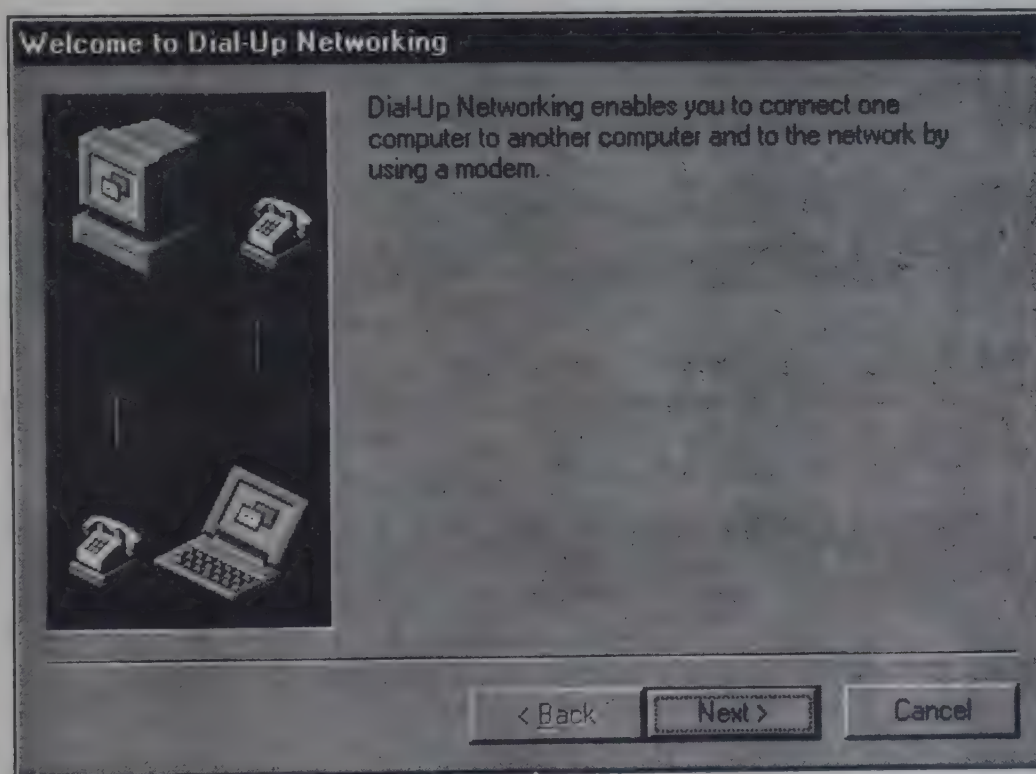


Figure 14.1 The Dial-Up Networking wizard.

You don't need this wizard for the office system, but if you define no connections, Dial-Up Networking runs the wizard every time. Click **Cancel** to exit from the wizard.

During the road computer installation, click **Next**, and the wizard displays the Make New Connection screen shown in Figure 14.2.

This procedure configures a particular connection. It allows you to have several locations that you call from one road computer. Observe that you

could use this feature to connect the networks of two office sites as well as from on the road.

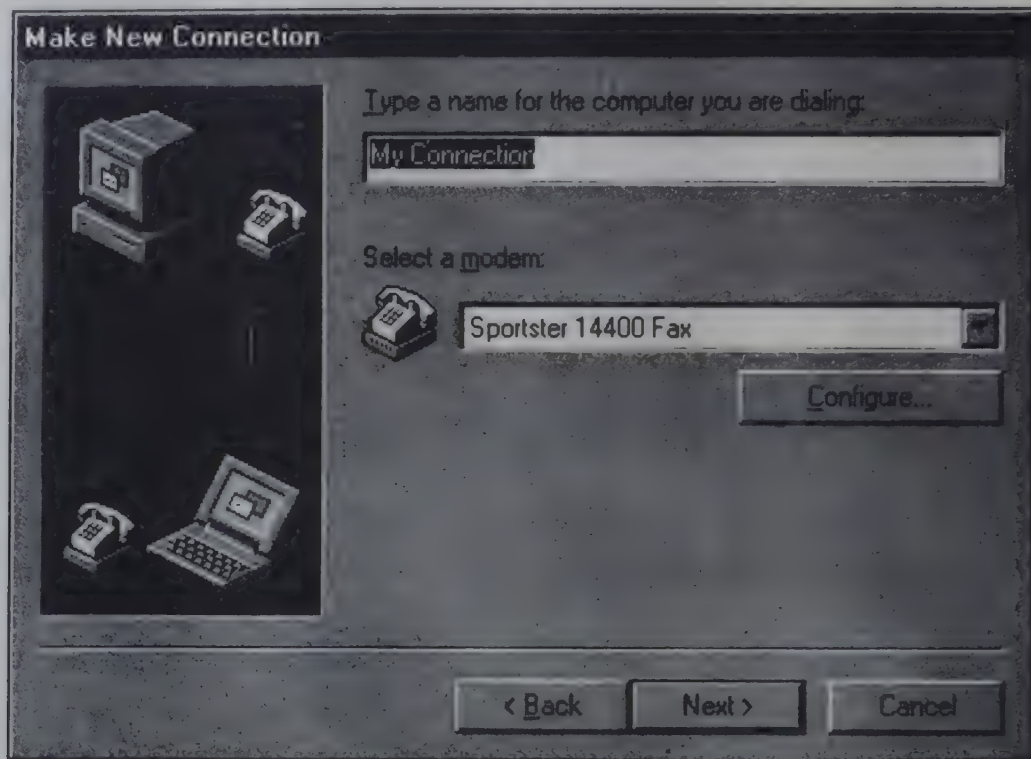


Figure 14.2 Make New Connection.

Assign a name to the connection, such as **The Office**. If your road computer has more than one modem (not likely for a laptop), select from the drop-down list box the one that you want to use. Click the **Configure** button to set configuration options for the modem. Click **Next** on the Make New Connection wizard screen to proceed to the next screen, as shown in Figure 14.3.

Enter the connection's area code and phone number. Select the country code and click **Next**. The next wizard page tells you that you are finished. Click **Finish** on that page. Now at least one connection is installed. The Dial-Up Networking accessory is displayed, as shown in Figure 14.4.

Each time you run Dial-Up Networking from the Accessories menu, you see this window. Double-click the connection icon to make the connection you just defined. (Don't try it yet, though, because there is more to do.) Double-click **Make New Connection** to start the wizard to define another connection.

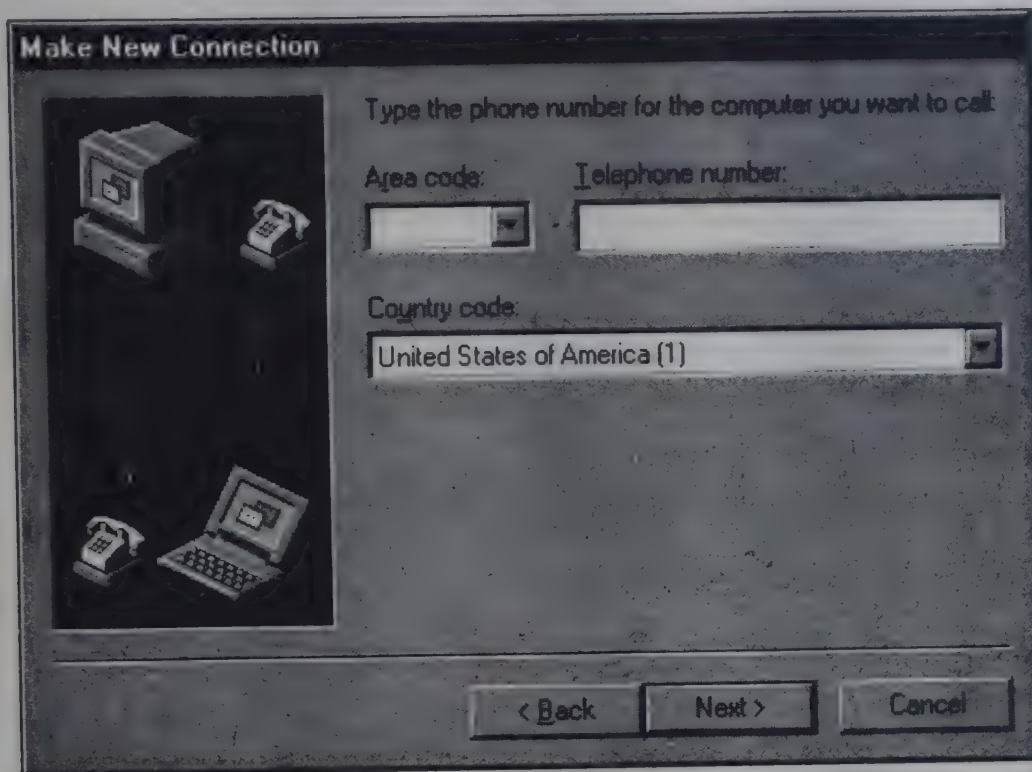


Figure 14.3 Entering a connection phone number.

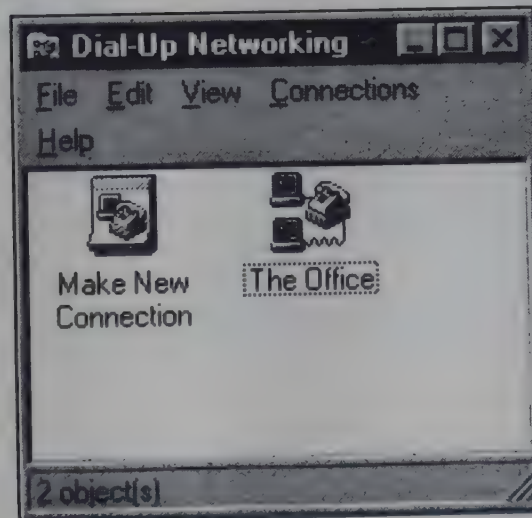


Figure 14.4 Dial-Up Networking with a connection.

Dialing Conventions

There can be more to dialing a phone than just knowing the area code and number. You might be in a motel with an outside line access code. You might want to charge the call to a calling card. There might be special access num-

bers to place a call through your long distance service provider. The call might not be long distance. The call might be long distance and within the same area code as your location. Some phone companies require you to dial the area code even when it is the same; some prohibit it; others work either way.

You can program Windows 95 to know all these rules and apply them no matter where you are calling from. Double-click the **Modems** icon in the Control Panel and click the **Dialing Properties** button on the Modems Properties dialog box's **General** page. This action opens the Dialing Properties dialog box shown in Figure 14.5.

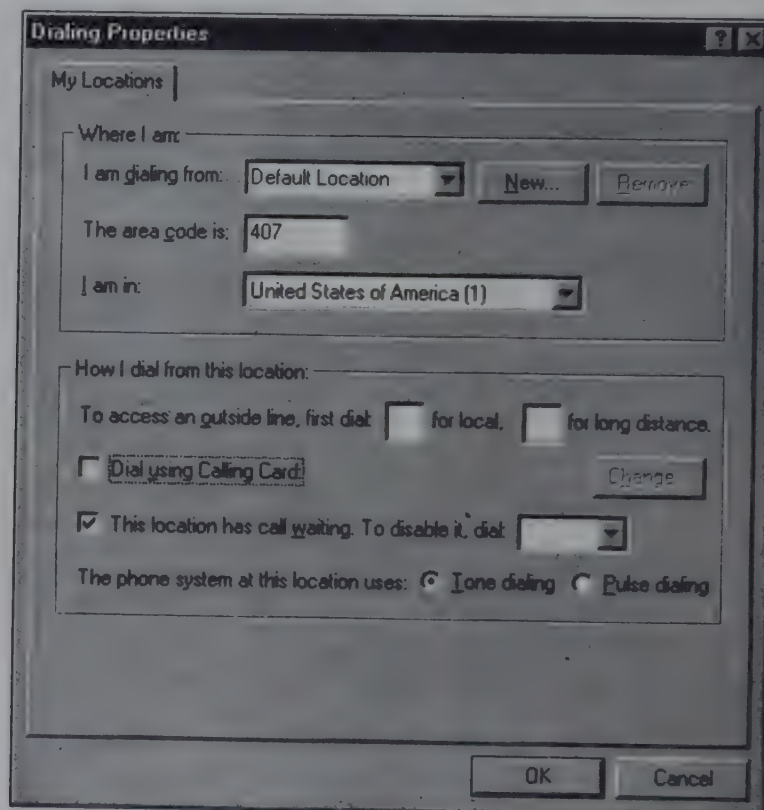


Figure 14.5 The Dialing Properties dialog box.

Initially, the Dialing Properties knows about only one location from which you dial. That location is called the Default Location. You should set it up to reflect the dialing conventions for your home base. By clicking **New**, you can build different sets of location conventions and assign meaningful names to them.

Turning on the **Dial Using Calling Card** checkbox opens the Change Calling Card dialog box shown in Figure 14.6.

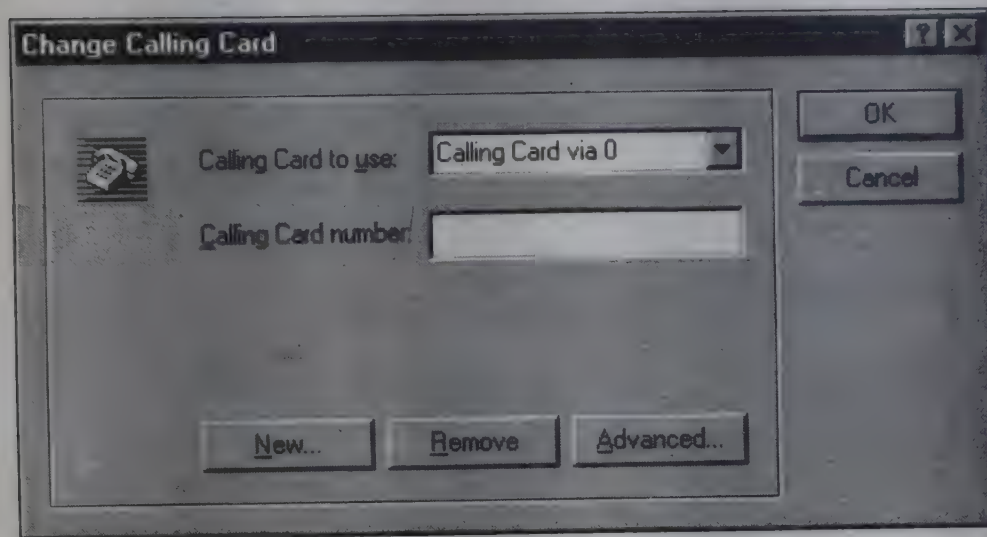


Figure 14.6 The Change Calling Card dialog box.

From the drop-down list box, select a calling card to use and enter the calling card number in the text box. The **New** button lets you define a card that is not on the list. The **Advanced** button opens the Dialing Rules dialog box shown in Figure 14.7.

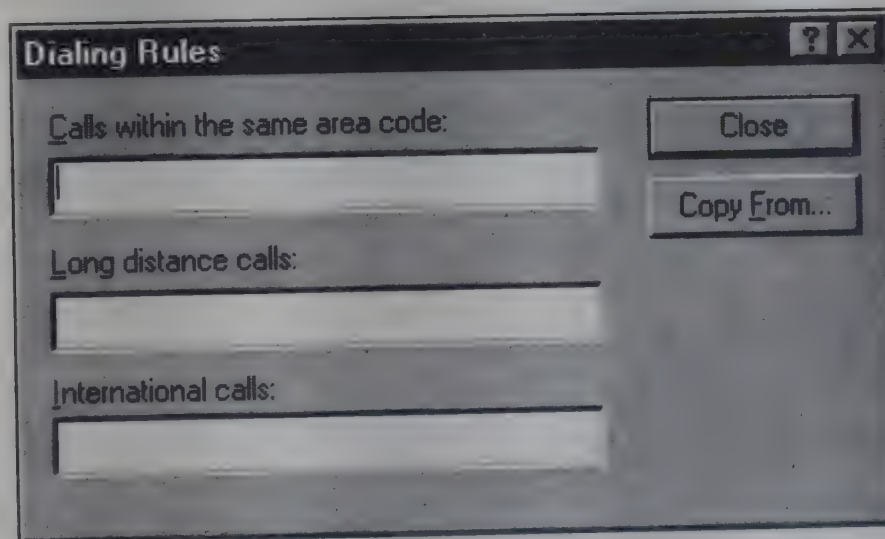


Figure 14.7 The Dialing Rules dialog box.

This gets complicated. Each field uses a string of codes to define the rules that control how to dial the field. You can read the rules by selecting the field and pressing **F1** or by clicking the **Help** (?) button in the upper-right corner of the window and then clicking the field. Figure 14.8 is the rules **Help** display.

Provides a space for you to type the rules for dialing calls.	
You can use the following characters to specify the rules for dialing calls:	
Enter	To specify
0-9	Dialable digits
ABCD	Dialable digits (tone dialing only; used for special control on some systems)
E	Country code
F	Area code (city code)
G	Local number
H	Card number
*,#	Dialable digits (tone dialing only)
T	Following digits are to be tone dialed
P	Following digits are to be pulse dialed
,	Pause for a fixed time
!	Hookflash (1/2 second on-hook, 1/2 second off-hook)
W	Wait for second dial tone
@	Wait for quiet answer (ringback followed by five seconds of silence)
\$	Wait for calling-card prompt ("bong")
?	Ask for input before dialing continues

Figure 14.8 Dialing rules.

Calling In

To call the office from the road, first make sure that the office computer is set up as a Dial-Up Server and is ready to receive a Dial-Up Networking call. A discussion later in this chapter explains how to establish that setup.

Run **Dial-Up Networking** from the road computer's Accessories menu and double-click the connection icon. If you don't see a connection icon on your system, simply open the File menu in the Dial-Up Networking window and choose **Connect**. This action opens the Connect To dialog box shown in Figure 14.9.

Click **Connect** to begin dialing. The Connecting dialog box shown in Figure 14.10 displays status messages about the progress of the connection.

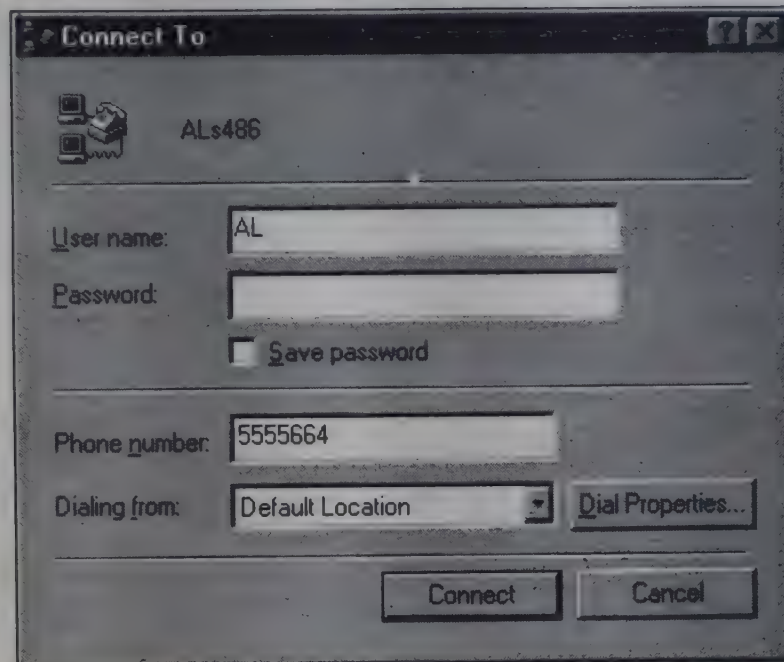


Figure 14.9 The Connect To dialog box.

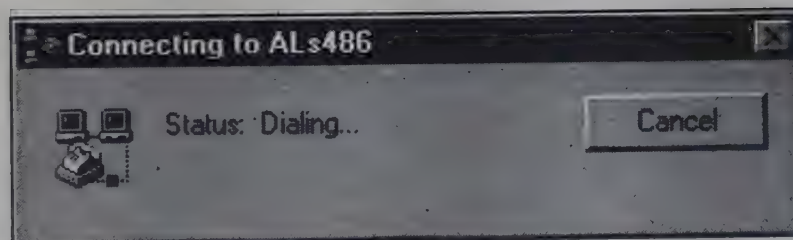


Figure 14.10 Connecting.

Plenty of things can go wrong at this point. The office computer might not answer. It might not have Dial-Up Server enabled. The line could be busy. Somebody might pick up a handset on the same line that you are calling and say, “Hello.” You might have the wrong number, or your dialing conventions could be set up incorrectly. You might get through, but your password might be wrong.

There are several error message dialog boxes that report these and other errors. The error messages do not always report exactly what the problem is. Sometimes you have to get on a voice line and ask someone to see what’s happening at the office computer.

Usually, however, everything goes well, the office computer answers the phone, you get logged on to the network, and the system displays the Connected dialog box shown in Figure 14.11.

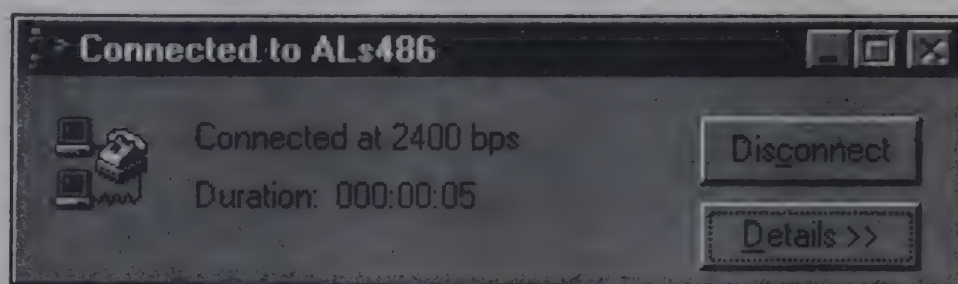


Figure 14.11 The Connected dialog box.

The **Details** button displays details about the connection. The **Disconnect** button breaks the connection. You can minimize the window, but you cannot close it. It stays open as long as the connection is in effect.

Another new feature you can download from the Microsoft Web site is modem voice support, which enables you to use your modem to answer voice calls and switch back and forth between data and voice. Voice modem support is now also packaged with many new PCs.

On-line from the Road to the Office

Now for the payoff. After the connection is complete, open your Network Neighborhood. The office computer you called is in there, as are all the other computers on the network at the office site. You can access them all just as if you were there with an on-site network connection. You can send and receive faxes and electronic mail. You can work with documents and applications that are installed on the office network.

The only difference between Dial-Up Networking and the other kind is that with Dial-Up Networking you communicate at the speed of the slower of the two modems. If you plan to use this feature for routine transfers of large files and messages, plan also to equip your office and road computers with the fastest modems available.

THE OFFICE: A DIAL-UP SERVER

Before you can call the office computer, it must be set up as a Dial-Up Server. You can't make this setup directly from the Windows 95 original distribution. You need to buy Microsoft Plus!, a collection of optional components that enhance the operation of your Windows 95 installation.

Fortunately, you need only one Plus Pack for your one Dial-Up Server. The road computers don't need it. Appendix A discusses the other features of Microsoft Plus!.

Installing Dial-Up Server

The Dial-Up Networking Server utility is installed automatically as part of the Microsoft Plus! installation. If you have not yet installed Microsoft Plus!, do so by placing the Plus! CD in your CD-ROM drive (or the first program disk in the disk drive), clicking **Start**, **Settings**, and **Control Panel**. When the Control Panel window appears, double-click **Add/Remove Programs** and click the **Install/Uninstall** tab. Click **Install**. Instructions appear on your screen to walk you through the process of installing Plus!. When you are offered the choice of installation, choose **Typical**. This installs all the features of Plus!, including the Dial-Up Networking utility.

Running Dial-Up Server

On the office computer, run **Dial-Up Networking** from the Accessories menu or find it in the My Computer window. There should be a command on the Connections menu named **Dial-Up Server**. If not, the Dial-Up Server software has not been installed, and road computers cannot connect to this office computer with Dial-Up Networking.

Choose the **Dial-Up Server** command to open the Dial-Up Server dialog box shown in Figure 14.12.

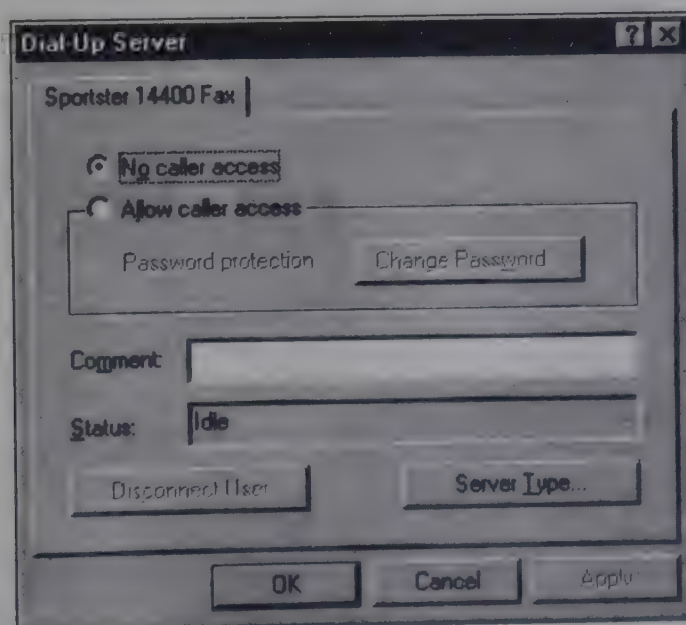


Figure 14.12 The Dial-Up Server dialog box.

Select the **Allow caller access** radio button. If you want to set a password, click the **Change Password** button. It's a good idea to use passwords when your computer can answer the phone. They discourage unauthorized probing of your network.

You may now close the dialog box. The office computer is monitoring the modem waiting for road computers to call in. While Dial-Up Networking is running, other applications that use your computer's modem won't be able to dial out.

Later, you can reopen the Dial-Up Server dialog box and select **No Caller Access** to terminate monitoring of the modem. You can also disconnect the current user by clicking the **Disconnect User** button.

THE OFFICE: DIRECT CABLE CONNECTION

Before you hit the road, you need to copy all your important documents onto the laptop so that you can work away from the office. Then, when the trip is over and you get back, you need to update the office computer's copies of these documents so that you can resume work there. For both of these times, you need a way to transfer files between computers. There are several alternatives.

The simplest but not the fastest way is to transfer the files on diskette. This strategy works, but nothing about it ensures that the two copies of these documents are current. You have to keep track of that manually.

Another way, and perhaps the best, is to have a network adapter installed on your laptop. Contemporary laptops have PCMCIA slots that accept credit card-sized PCMCIA network adapters. You can plug one of these into the laptop, connect the card to the network, and log on to the network just as a desktop does.

A third way is to handle the transfers with your Dial-Up Networking connection. This way works, but if you have a lot of files to transfer, it can take a long time.

There is another alternative, one that is as effective although not quite as fast as having a network adapter on your laptop. This method involves using the Direct Cable Connection accessory application.

You can connect your laptop's serial or parallel port to your desktop computer's serial or parallel port and transfer files through these connections if you have the proper cables and the software installed.

What are serial and parallel ports? A *serial* port is one that you would normally connect an external modem to. They are called COM1, COM2, and so on.

Some computers connect the mouse to a serial port. A *parallel* port is the one that printer cables connect to. They are called LPT1, LPT2, and so on. Some computers have more than one serial port and more than one parallel port.

You must connect a serial port to the serial port on the other computer or connect the parallel port to the other computer's parallel port. You cannot connect a serial port to a parallel port.

If one of the computers has only one of the kind of port that you want to use and that port is in use, you can get a switching device called an A-B Box from most computer stores.

Serial port connections require a special cable called a *null modem* cable. You can get one at a computer store or at Radio Shack. Make sure that you know the configuration of the serial port connectors on both computers. Some serial ports require 9-pin female connectors on the cable. Others require 25-pin female connectors. Still others require 25-pin male connectors. You might need a cable with two different connector configurations. Fortunately, you can get gender-changing adapters and 9-to-25 pin converters. Radio Shack carries everything you need to build a null modem cable.

Parallel port connections require a special cable with 25-pin male connectors at both ends and with the pin connections configured specifically for data transfer between computers. Ask about one at a computer store. If you can get a parallel cable that was designed to work with a legacy DOS application named LapLink, that cable works with the Windows 95 Direct Cable Connection.

Installing the Direct Cable Connection Application

You must install the Direct Cable Connection application on both computers. To install it, you must have installed Dial-Up Networking. If you have not installed Dial-Up Networking, the setup procedure installs Dial-Up Networking when you install Direct Cable Connection.

Double-click **Add/Remove Programs** on the Control Panel, select the **Windows Setup** page, select the **Communications** component, and click the **Details** button. If Direct Cable Connection is already checked, the feature was installed earlier; click **Cancel** on both dialog boxes and proceed to the next discussion in this chapter.

If Direct Cable Connection has not been installed, check it and click **OK** in both dialog boxes.

You need your Windows 95 installation CD-ROM inserted or the installation diskettes handy. The setup procedure copies files from the Windows disk. When it is finished copying, you must restart your computer. When you do, Direct Cable Connection is available on the Accessories menu.

Making the Connection

Plug the cable into both computers. From the Accessories menu on both computers, run **Direct Cable Connection**. Both computers display the Direct Cable Connection wizard shown in Figure 14.13.

The host-guest relationship serves to get the connection established. The guest can access the host's shared resources and those of the other computers on the network. The host can access the guest's shared resources. Other computers on the network cannot access the guest's shared resources.

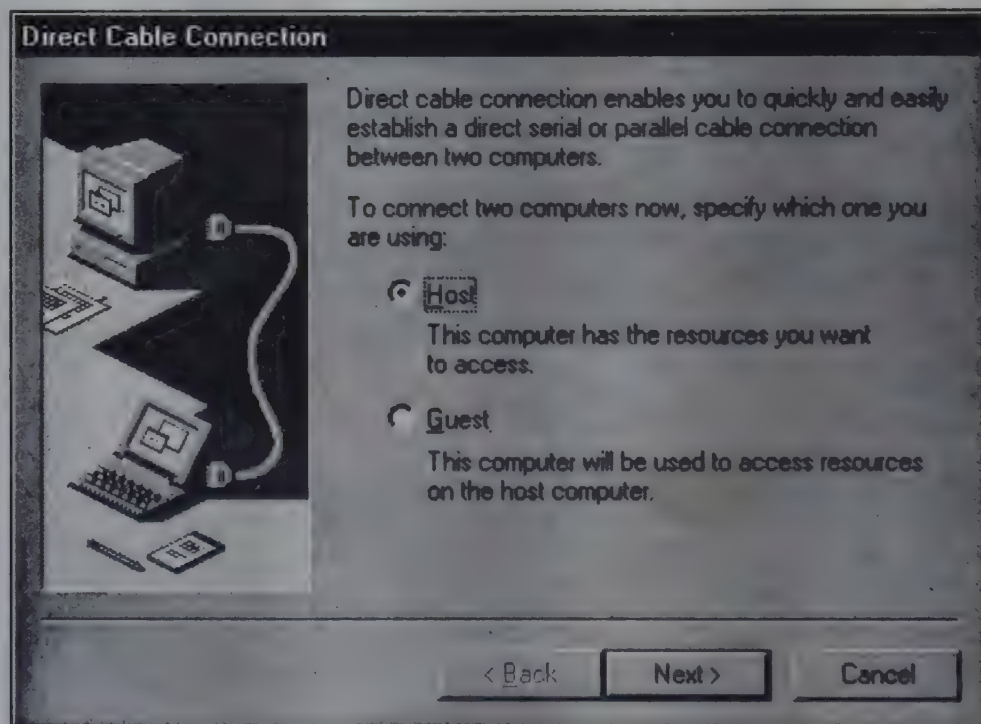


Figure 14.13 Direct Cable Connection wizard.

Select **Host** on one computer and **Guest** on the other. Click **Next** on both computers. Figure 14.14 shows the wizard asking you to assign ports.

The port settings might be different on the two computers, but the connection type must be the same. Select the correct option and click **Next** at both computers. Figure 14.15 shows what the wizard displays on the host.

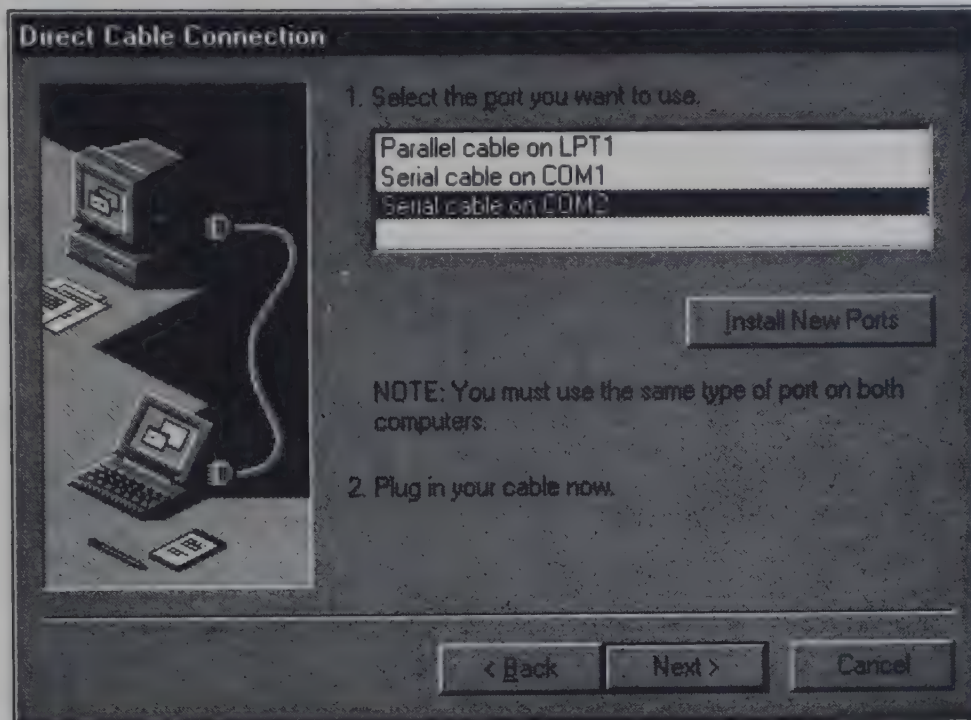


Figure 14.14 Assigning ports.

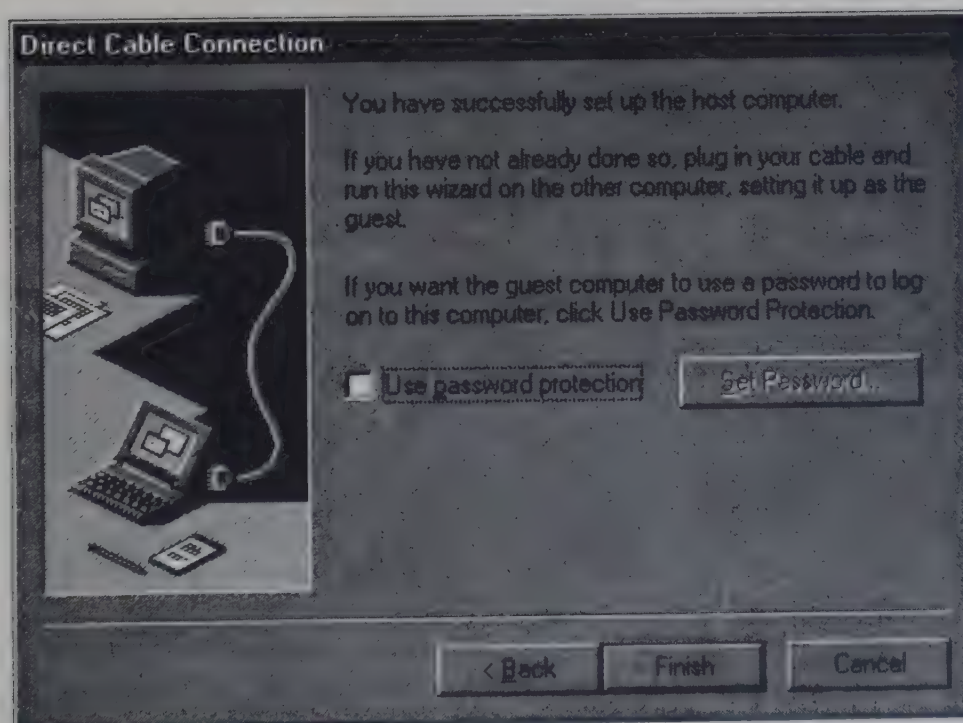


Figure 14.15 Finishing the host

The corresponding wizard on the guest does not ask you to assign a password.

It's silly to use a password in this context. The computers in a direct cable connection can't be any farther apart than the length of the cables. Serial cables aren't reliable past 25 feet. Parallel cables must be shorter than that. If someone is connecting to your computer, you certainly know about it and have to cooperate. If you aren't around to stop them, your password *isn't* going to help. They could just sit at your computer and turn off the password.

Click **Finish** on both computers. In subsequent connections, you don't have to go past the first wizard screen as long as the settings don't change. Figure 14.16 shows the Direct Cable Connection application running in the guest computer.

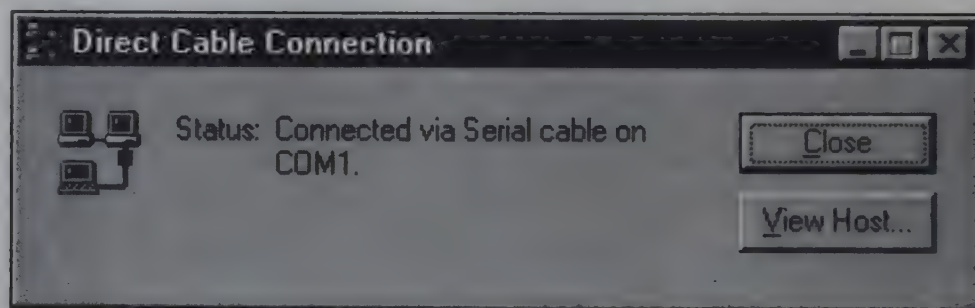


Figure 14.16 Guest computer connected.

The host computer's Direct Cable Connection application is similar, but it does not have the **View Host** button. When you first make the connection, the guest automatically executes the **View Host** command, which displays the shared resources in the host computer. Figure 14.17 is an example of that display.

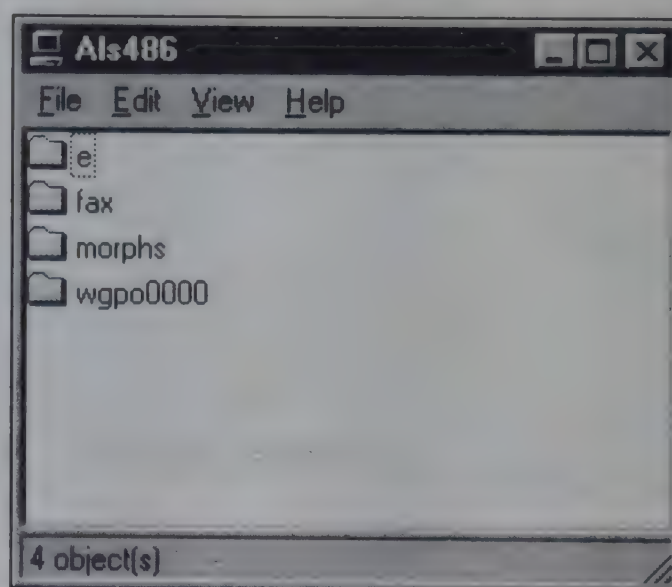


Figure 14.17 The host's shared resources.

The display in Figure 14.17 is the same window that the Network Neighborhood displays for a computer on the network. You can open and copy files to and from these shared resources during Direct Cable Connection just as if you were on the network.

THE BRIEFCASE

The Briefcase is a convenient way to keep your documents current when you maintain them at the office but work with them at home or on the road. The Briefcase is a folder with unique capabilities. It remembers where its contents came from and can automatically synchronize its documents with their original copies.

Installing Briefcase

Usually, you install the Briefcase on the desktop of the road computer. When you install Windows 95 and choose the **Portable** option, Setup installs Briefcase automatically. If Briefcase is installed, the icon shown in Figure 14.18 is on the desktop.

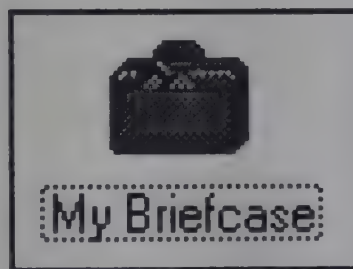


Figure 14.18 The Briefcase icon.

If there is no Briefcase and you want one, right-click the desktop, choose **New** on the desktop's right-click menu, and choose **Briefcase** on the cascaded New menu. You can change its name in the same way you change a folder's name or a file's name. Click the icon, wait a moment, and click the icon label. Then type the new name and press **Enter**.

Taking Documents on the Road

Before you leave, connect your road computer to your office computer using one of the techniques described in this chapter.

The documents that you want to put in the Briefcase must be in a shared location in the office computer—usually in folders. Therefore, if you do not want

other users on the network rummaging around in your documents, you should protect these shared folders. You might prefer to share the document folders only while you are moving things to and from your Briefcase. That way they do not routinely appear as shared resources in the Network Neighborhood. There is no point in arousing needless curiosity. Even then, use a password because the folders are visible on the network while you make Briefcase copies. Of course, if you work with documents from a pool of public documents on the network, the password is not necessary.

Working at the road computer, drag and drop the documents from their shared location in the office computer to the road computer's **Briefcase** icon. This action copies the documents into the road computer's Briefcase and leaves the originals intact in the office computer. Disconnect the road computer from the network. Your road computer is ready to travel.

You can copy mail messages into the Briefcase but not directly from a Microsoft Exchange message folder.

If the Briefcase contains documents that were changed at the office computer after you copied them into the Briefcase, you can automatically update the Briefcase copies. Right-click the **Briefcase** icon and choose **Update All** on the right-click menu.

While You Are Away...

On the road, work with the documents from the road computer's Briefcase. Double-click the Briefcase icon to open the Briefcase and access its contents. You can change some, none, or all of the documents, and you do not have to remember which ones you changed. Figure 14.19 shows the Briefcase with some documents.

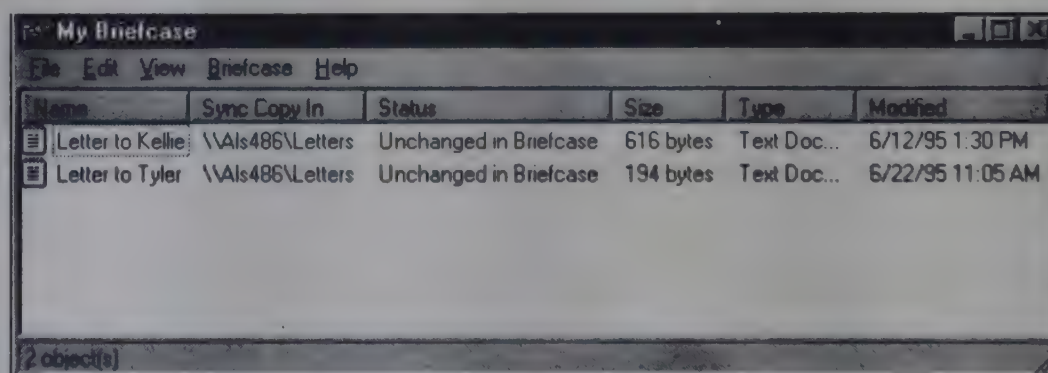


Figure 14.19 Documents in the Briefcase.

You can sort the documents in the Briefcase in the sequence of any of the columns by clicking the column header button.

If you change a document in the Briefcase and decide not to update the office computer's master copy with those changes, select the document and choose **Properties** on the File menu or on the document's right-click menu. Click the **Update Status** tab. Figure 14.20 shows the document's Properties dialog box turned to the **Update Status** page.

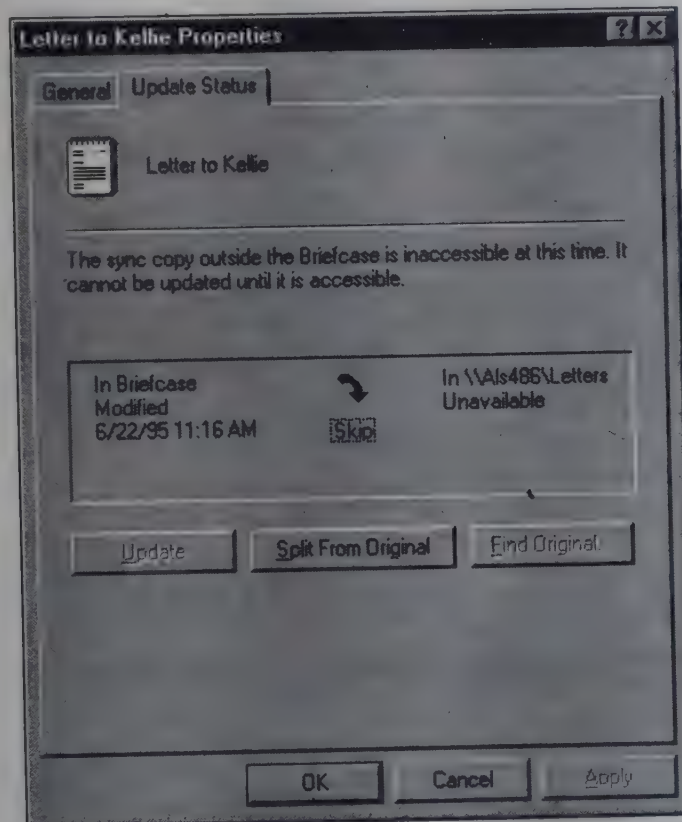


Figure 14.20 Update Status page.

Click the **Split From Original** button. Answer yes to the confirmation dialog box. The status of the document changes to Orphan. An Orphan document is in the Briefcase, but any changes that you make to the document are not automatically updated in the document's original copy when you return to the office. Figure 14.21 shows the Briefcase after a document has been changed into an Orphan.

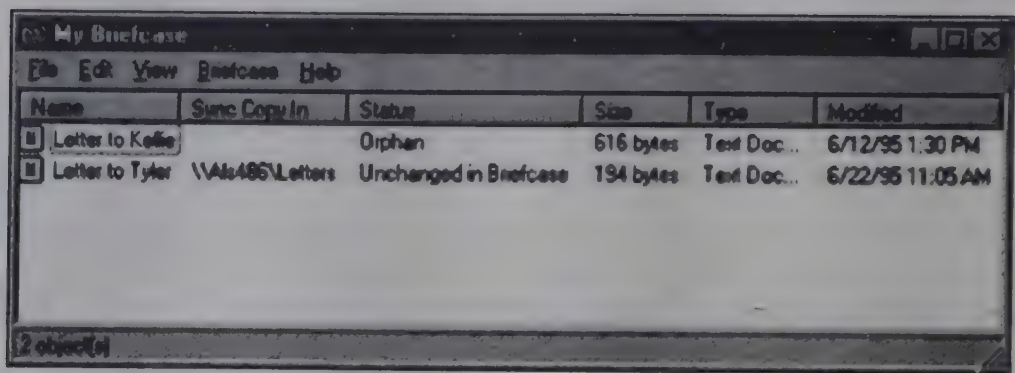


Figure 14.21 An Orphan.

Use caution when you make an orphan. As its name implies, there is no way to restore an orphaned document's parentage.

When You Return...

Back at the office, you can update the master copies of the documents in the office computer. Reestablish the connection between the road and office computers.

At the office computer, share the folders where the documents originated.

At the road computer, right-click the **Briefcase** icon and choose the **Update All** command on the right-click menu. If you have changed any documents, the command displays the Update dialog box shown in Figure 14.22.

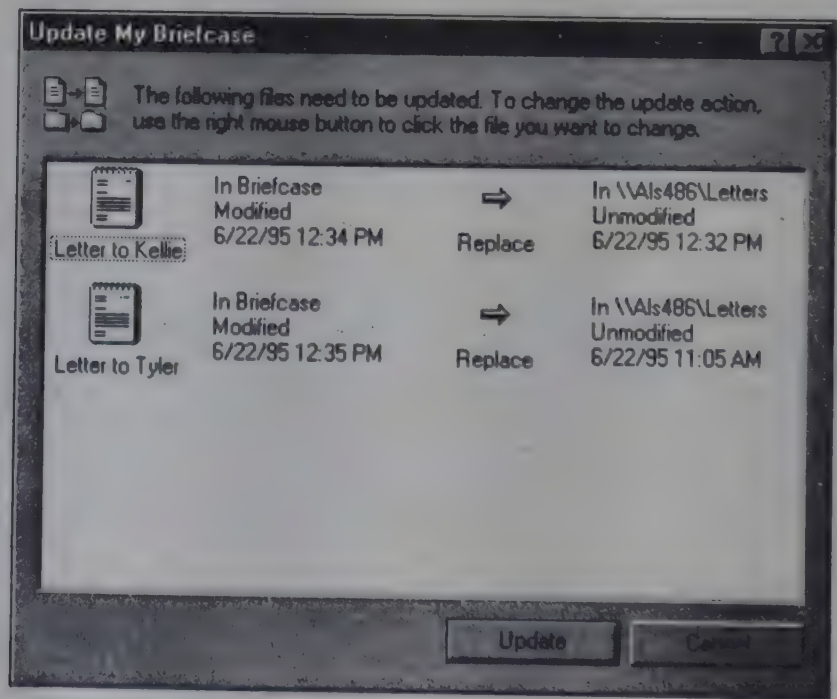


Figure 14.22 The Update dialog box.

You can change the update action for a document by right-clicking its icon and choosing a different action from the right-click menu. Update actions can copy documents in either direction or skip any update action at this time.

If you delete a document from the Briefcase, the default update action is to delete the document from its origin in the office computer, too. Be careful about this. You might have deleted the document from the Briefcase only because you changed your mind about taking it on the road. It is safer to change the Briefcase copy to an orphan before deleting it.

When Two Users Change the Same Document...

Suppose you take a document from a shared folder on the road and change it. Suppose that someone else changes the same document before you return and update the original with your changes. This problem can be solved only by better coordination among users. It happens occasionally, nonetheless, even in the most well-coordinated offices.

The Briefcase recognizes that both copies of the document have been modified. When you choose the **Update All** command, the Update dialog box reflects the conflict, as shown in Figure 14.23.

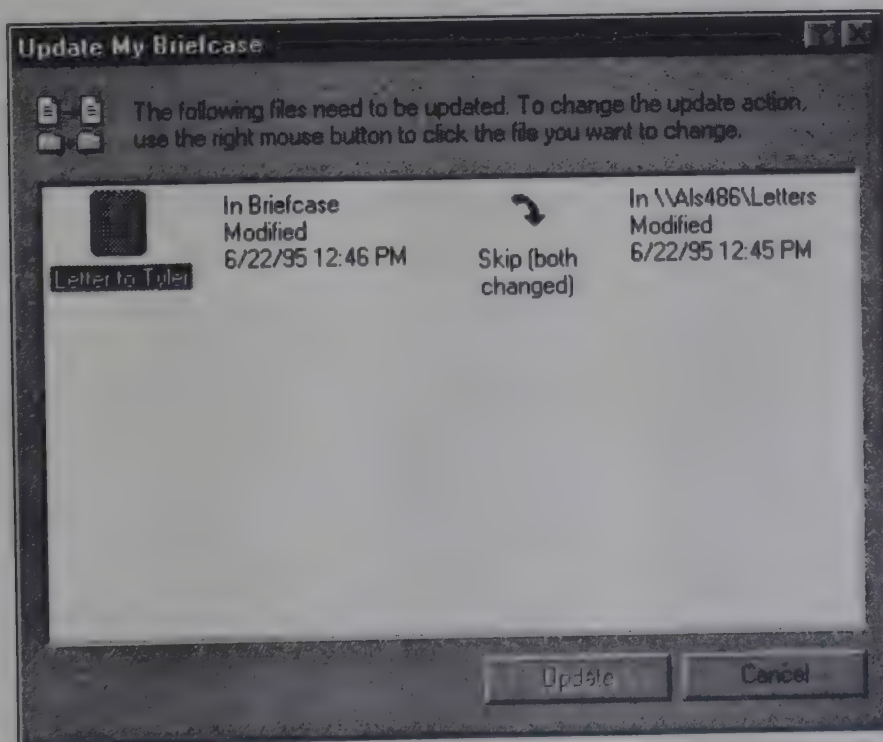


Figure 14.23 Conflicting document modifications.

When this happens, you must look at both copies of the document to determine what to do. One set of changes might supersede the other, or the two sets of changes might need to be merged. Make those changes to one of the copies and then choose the Briefcase's **Update All** command again. The Update dialog box still shows the conflict. Right-click the document icon and choose the correct update action from the right-click menu.



CHAPTER 15

Managing the Disk Storage System

As much as we would like to have the operating system do all the hard work, there are still some things that only a person can do effectively. One of these things is to manage the disk storage system. Disks can become fragmented and need defragmenting; they can develop trouble spots and need repair; their potential for total hardware failure requires frequent backups; and our propensity as users to overburden our disk systems with documents and applications suggests a need for disk compression. The Accessories/System Tools menu has utility programs that you can use to manage your disk system. The programs can diagnose, modify, compress, and repair the disk storage system, but you have to decide when to do these things. This chapter describes the processes.

You will learn about:

- The disk storage system
- Backup
- ScanDisk
- Disk Defragmenter
- DriveSpace
- Formatting diskettes

INSTALLING SYSTEM TOOLS

If any of the programs discussed in this chapter are not on the Accessories/System Tools menu, use Control Panel's **Add/Remove Programs** feature to install them.

THE DISK STORAGE SYSTEM'S ORGANIZATION

Efficient use of the tools described in this chapter requires a passing knowledge of how Windows 95 maintains files in the disk system.

Your documents and applications are stored in the files. Windows 95 has a number of its own files. The logical file structure is implemented on top of the physical disk system of sectors in clustered groups. Clusters are threaded together by the file allocation table.

The *disk storage system* consists of the *physical disk system*, which is the medium that implements the *logical file system*.

Files and Directories

The logical file system organizes files into a hierarchical directory structure. Windows 95 folders are the equivalent of MS-DOS subdirectories. The desktop is a subdirectory under the directory in which you installed Windows 95. When you look at icons in Explorer windows, you are viewing a pictorial representation of the files and directories for each of the disk drives.

Tracks

Both sides of a disk's surface are organized into concentric ring *tracks*. Each track, from the outermost track at the edge to the innermost track near the hub, has a fixed, common data capacity, recorded as a stream of digital bits. A bit stores an atomic unit of data that has one of two states: zero or one. Inasmuch as all tracks on a disk surface store the same number of bits, the innermost track is necessarily recorded much more densely than the outermost track. The number of tracks on a disk depends on the medium.

Sectors

The physical disk system's tracks are organized into *sectors*. Each sector is 512 bytes long. A *byte* is an eight-bit unit of data storage that contains one alphabetic character or one numeric integer value in the range -127 to 128. The number of sectors on a track depends on the medium. The number of sectors multiplied by the number of tracks multiplied by 512 produces the capacity, in bytes, of the disk.

Clusters

The file system groups sectors into fixed sector-length *clusters*. A file consists of one or more clusters. The number of sectors in a cluster varies depending on the medium. Some disk media use four sectors for each cluster; others use 16. Other values, always powers of two, are common. On a noncompressed disk medium, the smallest possible file—one with only one byte of data—consumes one cluster, which, on a 16 sector per cluster file system, reserves 8,192 bytes of storage.

The File Allocation Table

The *File Allocation Table* (FAT) is a table of cluster numbers permanently stored in a fixed location on the physical disk. The FAT maintains variable-length chains of clusters. One chain, called the *free chain*, contains clusters that are not in use. Initially, all the clusters are in the free chain. As files are created, other chains are built by taking entries from the free chain. A file's directory entry contains the address of the first cluster that the file owns. As a file grows in size and needs additional storage space beyond its existing clusters, the file system assigns the next available cluster in the free chain to the file. The first cluster's entry in a chain points to the second, which points to the third, and so on, until the last entry points nowhere, indicating the end of the chain.

Compressed Drives

A compressed disk drive is one that seems to store more data than its fixed capacity permits. A compressed drive consists of a *host* drive and a compressed volume. You will learn how to compress drives later in this chapter; you need to understand the concept of a host drive when you learn about the management of your disk storage systems.

Refer to the My Computer window in Figure 3.3 in Chapter 3. Listed are a C: drive and an H: drive named “Host for C.” These two logical drives are, in fact, one physical drive. The host drive H: is the real thing. It contains some data storage of its own that you can use like that of any other disk drive. It also contains a huge, hidden file named **Drvspace.000**. If the disk was compressed under earlier versions of MS-DOS, the file might be named **Dblspace.000**. This file, which you normally do not view, change, copy, delete, or mess with in any way, is the compressed logical C: drive. It contains all the files and directories that you see when you explore the C: drive. The simulated C: drive sectors are recorded with a binary data-compression algorithm and are retrieved with a reciprocal binary data-decompression algorithm. The effect is to seemingly double the capacity of the drive, although the actual compression factor depends on the binary density and compressibility of the data being stored.

BACKUP

Backup is a utility program that backs up your entire system or selected disks, folders, or files. The backups can be made to a tape device if one is installed, or you can back up to diskettes, hard drives, and drives on other computers in the network.

Backing Up Files

Start the Backup program from the Programs/Accessories/System Tools menu. The first time you use Backup, the Welcome to Microsoft Backup Wizard opening screen is displayed. Click **OK**. The three processes in the Backup program—Backup, Restore, and Compare—are represented by tabbed pages in the application window. When you start the program after the initial time, it opens at the **Backup** page. The left side of the page displays a tree of possible backup storage media. When you select a drive from this tree, the right side of the page displays the folders and files in the drive’s root directory. You can expand the tree and open the folders. When you click a folder on the left side, the right side displays the contents of the selected folder.

The objective is to check off in the right side of the window the files or folders that you want to back up. Figure 15.1 shows the Backup page with some folders checked.

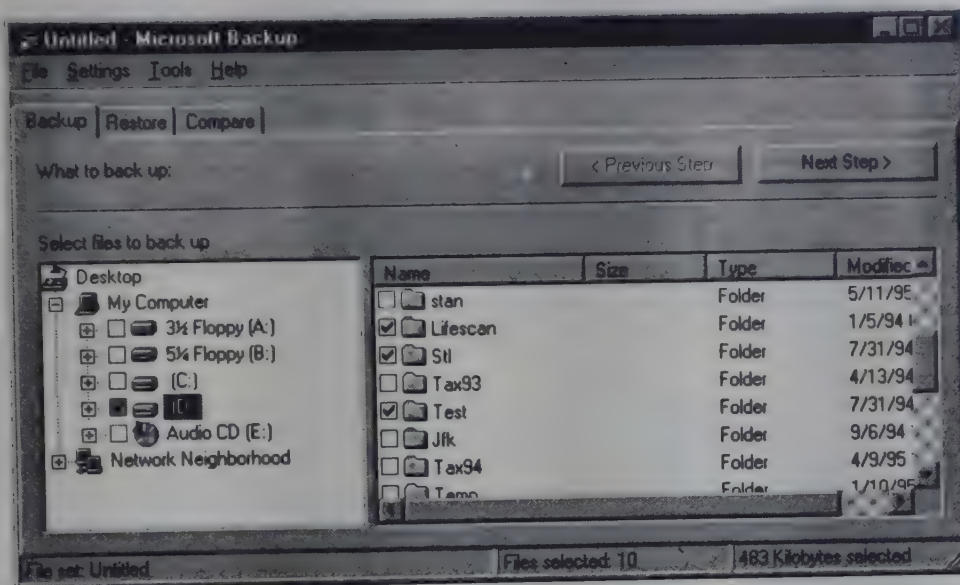


Figure 15.1 Folders checked for backup.

You can navigate throughout the file system and check off files, folders, and complete drives that you want to back up. A group of drives, folders, and files that are checked off in this fashion is called a backup set.

When you have all the drives, folders, and files checked for a backup set, click **Next Step**. Backup displays the tree of devices again and asks you to pick a destination for the backup. Figure 15.2 shows Backup ready to back up the selected folders onto the A: drive.

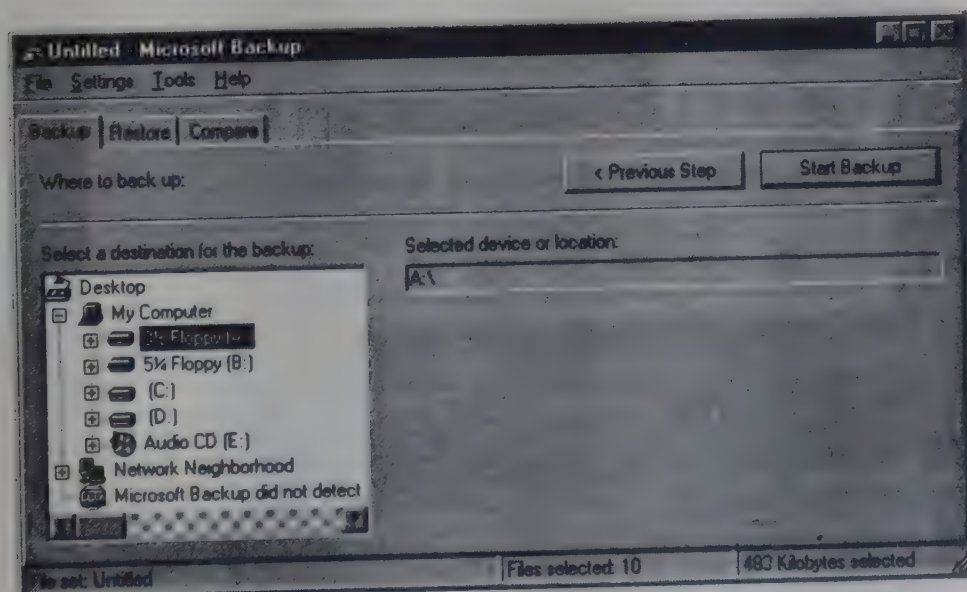


Figure 15.2 Ready to back up.

Observe the lowest icon in the destination list. This icon is a tape backup device, which I do not have installed.

Click **Start Backup** to proceed. Figure 15.3 is a dialog box that asks you to name the backup set.

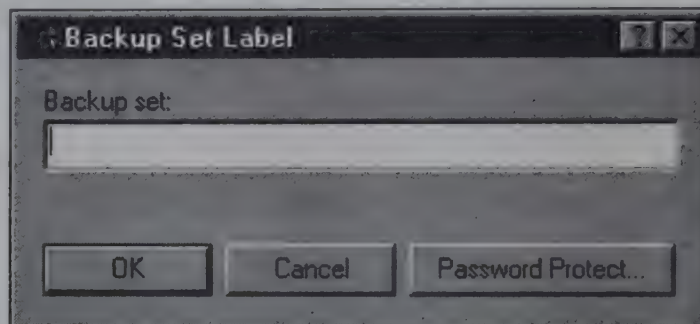


Figure 15.3 Naming the backup set.

The backup set represents the backup about to be made. The backup set could span several diskettes, or it could be stored in a folder on your computer or on another computer on the network. You must give the backup set a name because several backup sets could be stored on the same medium. If you can assign a password to the backup set, another person would need to know the password to restore the files.

Click **OK** to proceed. Figure 15.4 shows the backup in progress.

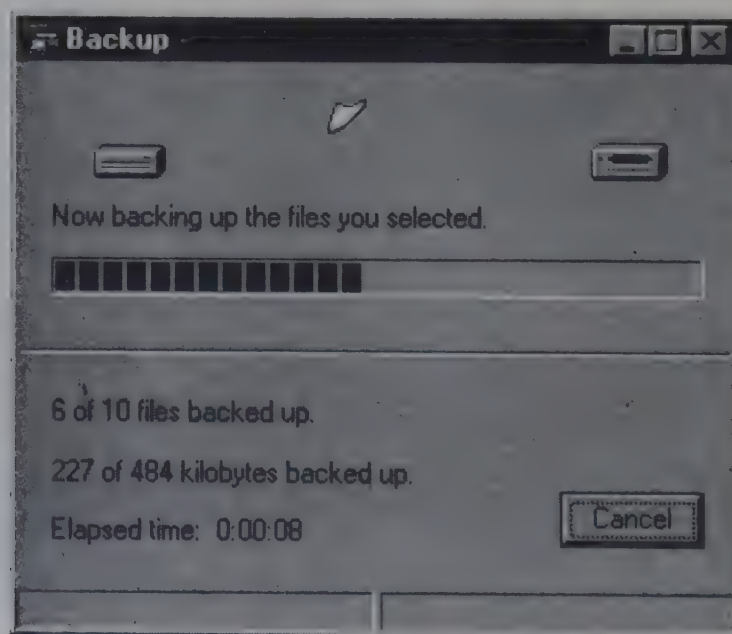


Figure 15.4 Running the Backup program.

During the backup, you are prompted to insert a new diskette when the current one fills. Label these diskettes with the name of the backup set and the diskette number (for example, 1 of 5, 2 of 5, and so on).

This is no time for false economy. Even though you can write several small backup sets to one diskette, it is safer to dedicate to each backup set its own diskette. Diskettes can fail, too.

Restoring Backed Up Files

The **Restore** page lets you restore files from a backup set: Figure 15.5 shows Backup's **Restore** page.

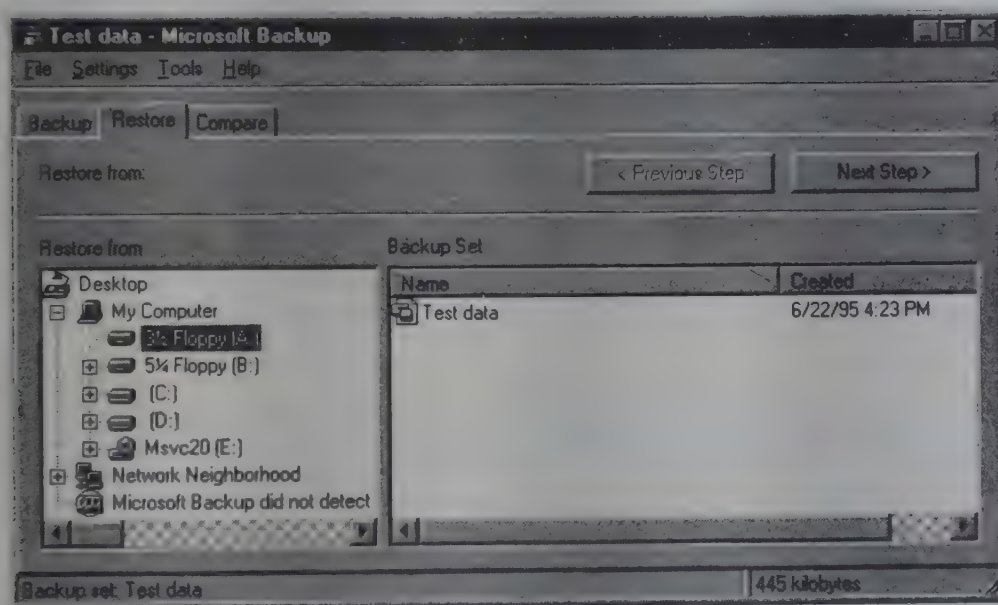


Figure 15.5 The Restore page.

Select the backup set from which you wish to restore files. Click **Next Step** to view the disks, folders, and files in the selected backup set. Figure 15.6 shows the contents of a backup set named **Test data** selected from the diskette in the A: drive.

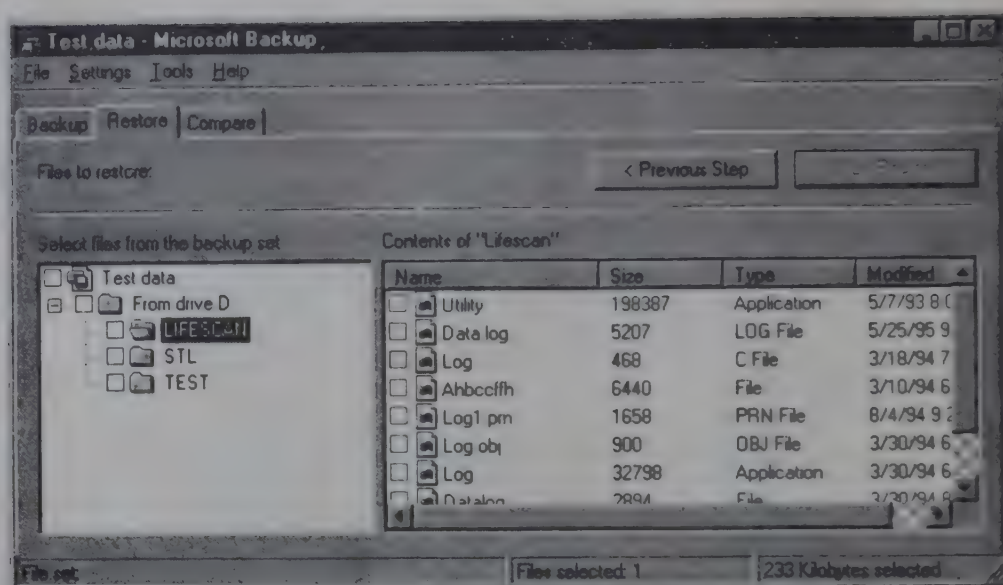


Figure 15.6 A backup set.

Figure 15.6 shows the backup set's LIFESCAN folder selected. The right side of the screen lists the folder's contents. Select the folders and files that you want to restore. You can restore all or part of a backup set. In Figure 15.7, we have selected the only file in the backup set's STL folder.

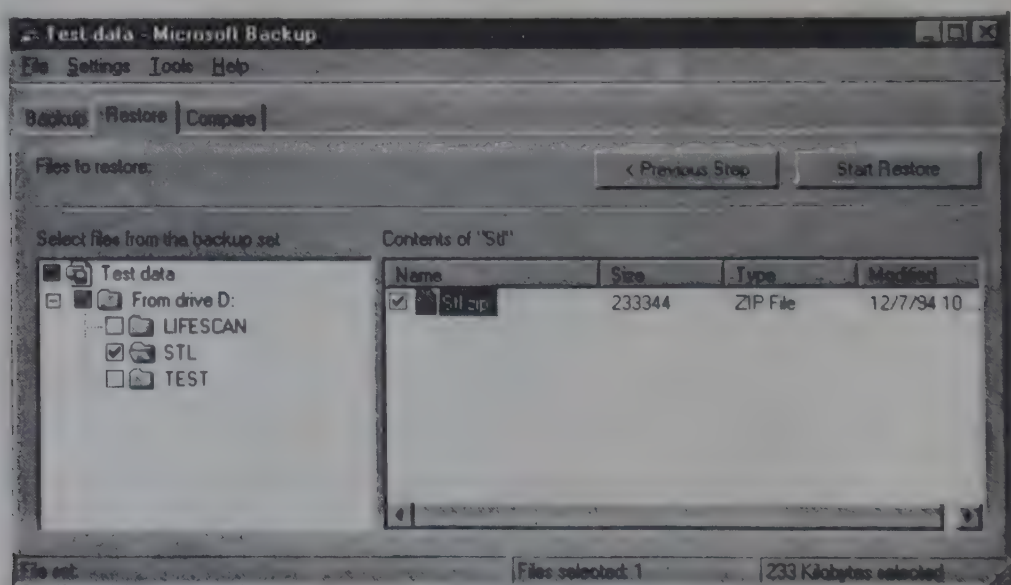


Figure 15.7 A file selected in a backup set.

Click **Start Restore**. Figure 15.8 shows the restore process under way.

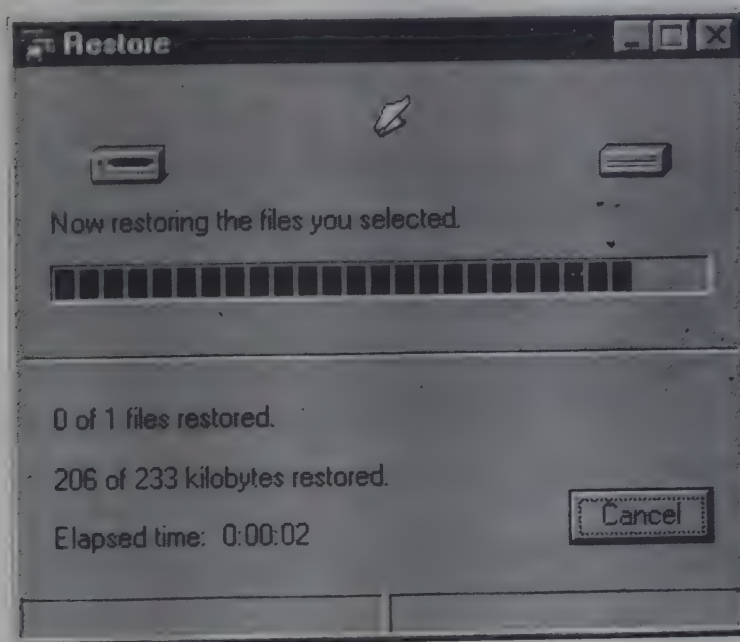


Figure 15.8 Restoring.

If errors occur during the restore process, the program displays the dialog box shown in Figure 15.9.

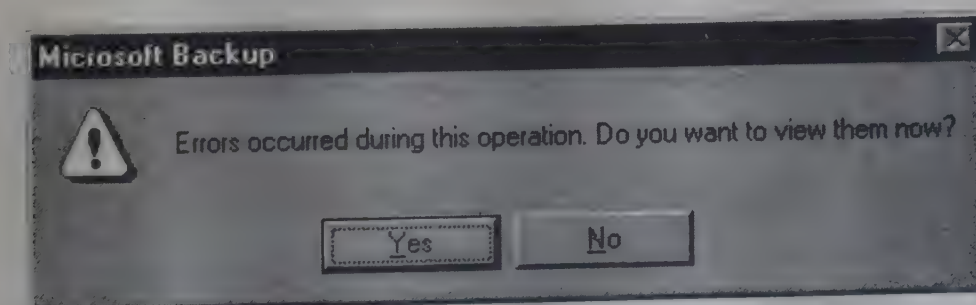


Figure 15.9 Restore error dialog box.

Restore writes its error messages to a text log file named **error.log**. If you click **Yes**, Restore opens the Notepad accessory and loads it with the error log file, as shown in Figure 15.10.

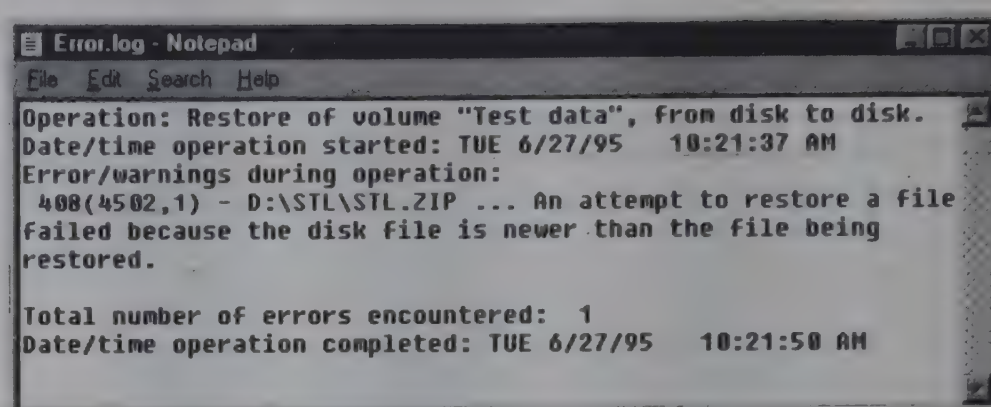


Figure 15.10 Restore error.log file.

The error log in Figure 15.10 says that the file on the disk is newer than the one in the backup set. This message can be misleading. The same message is logged when the two files have the same date and time.

Comparing Backups with Originals

If you have doubts about the integrity of a backup or wonder whether files on the disk are different from those on the backup, you can use **Backup's Compare** page, shown in Figure 15.11.

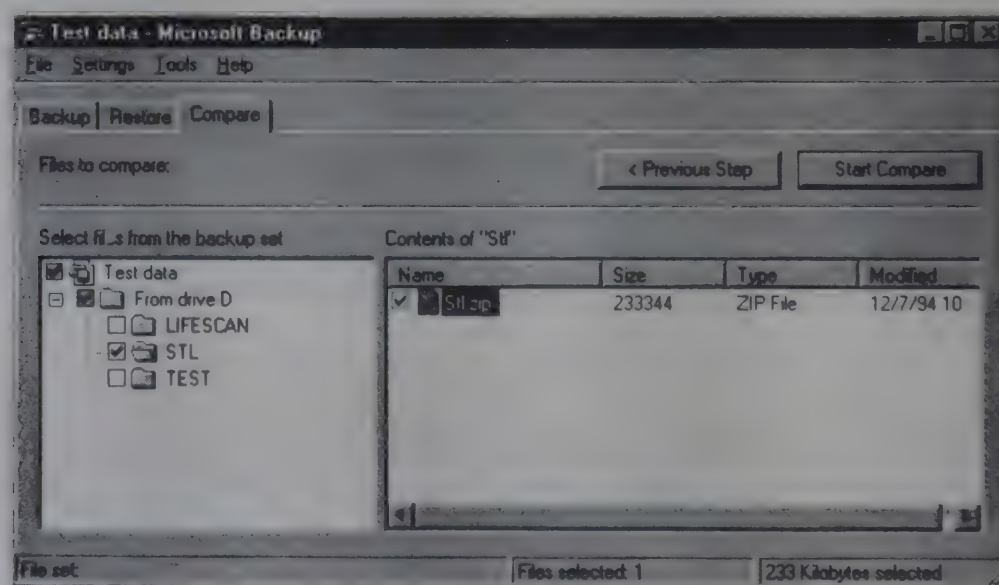


Figure 15.11 The Compare page.

Figure 15.11 shows the **Compare** page after you have selected a file from a backup set. You get to this point by using the same procedure that you used during the restore operation to get to Figure 15.7.

Click **Start Compare**. Figure 15.12 shows the compare process in progress.

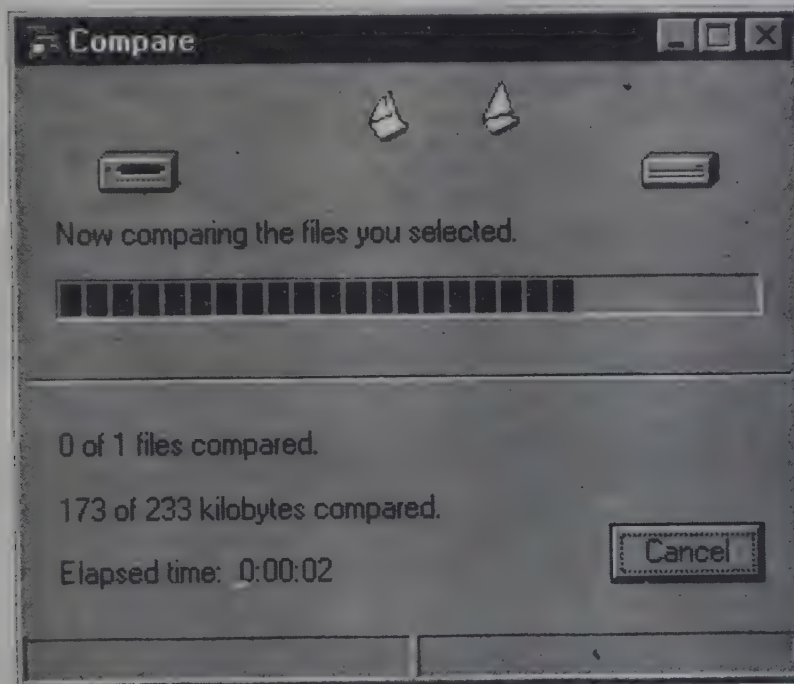


Figure 15.12 The compare process.

When the compare process completes, it displays the error message dialog box shown in Figure 15.9 if there were errors. Click **Yes** to view the error log shown in Figure 15.13.

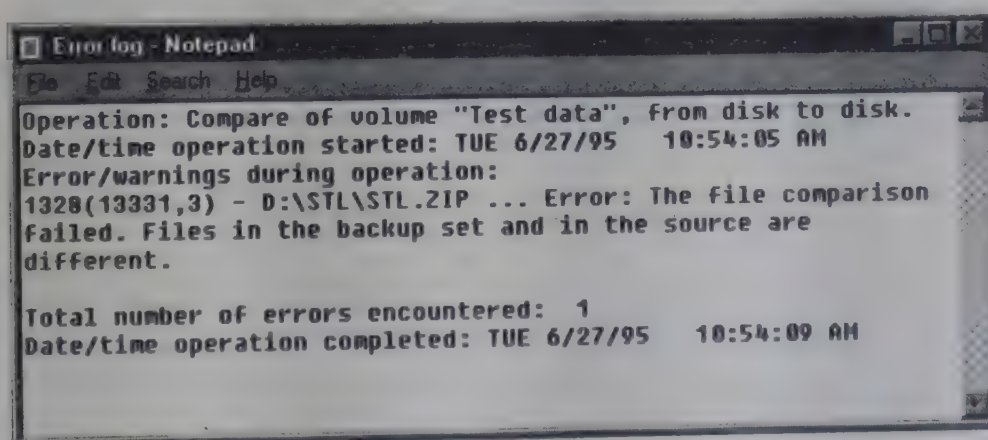


Figure 15.13 Compare error log.

In this example, a file in the backup set differs from its corresponding file on the disk system, which is really all that the compare process can sense. The information in the log is not very informative. It tells you only the names of the files that differ but no details about the differences. Compare does not consider the time and date stamps on the files that compare differently and does not tell you whether files that compare equally have different times or dates.

SCANDISK

ScanDisk scans a disk searching for errors in the logical file systems and on the physical medium. You should run ScanDisk periodically—at least once a month if you use your computer daily, more often if your workday consists mainly of computer activities. Figure 15.14 shows the ScanDisk application.

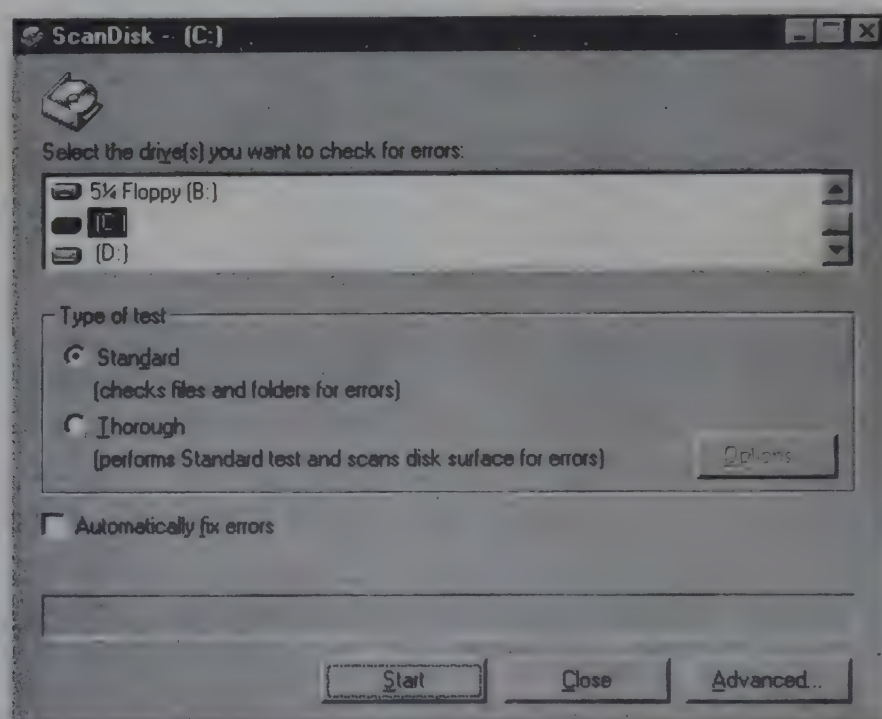


Figure 15.14 The ScanDisk application.

Select a disk drive from the list and choose the type of test you want to run. The standard test tests the file system. It examines the directory structure and the file allocation table, searching for data integrity problems. Don't confuse this process with one that validates the indexes in a database system or the cells in a spreadsheet. ScanDisk examines the data structures that manage file directories and disk cluster allocations.

The thorough test performs the standard test and then reads, writes, and validates data on the disk sectors to test for physical errors on the medium. This test takes a long time on a large hard disk.

On new PCs sold with Windows 95 installed, a ScanDisk feature is available that runs ScanDisk automatically when you power up after a lock up or loss of power. Whenever your system is turned off without the normal exit procedure, ScanDisk searches for damaged files or clusters.

Advanced Options

Click **Advanced** on the ScanDisk application to view the ScanDisk Advanced Options dialog box shown in Figure 15.15.

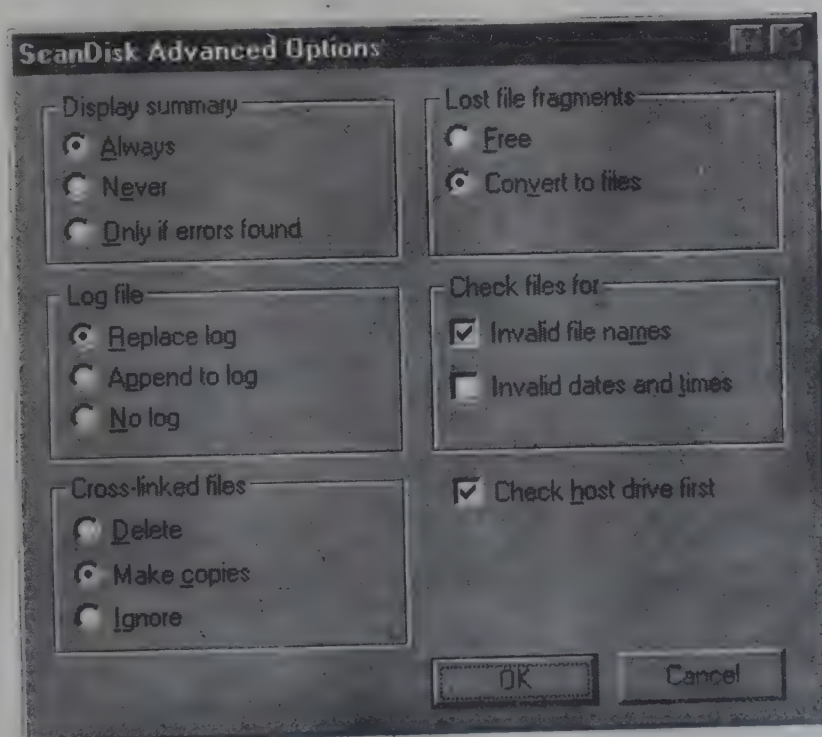


Figure 15.15 The ScanDisk Advanced Options dialog box.

Display Summary

The **Display summary** option is for your convenience. It doesn't hurt anything to always display the summary, which reports on the screen the results of the scan.

Log File

The **Log file** option creates a text file similar to the one that Backup produces. It logs the errors that ScanDisk finds and the actions that ScanDisk takes. The **Replace log** option always replaces a previous log. The **Append to log** option appends to the previous log. The **No log** option suppresses logging.

If you run ScanDisk frequently on a personal computer and always correct all errors when you find them, use the **Replace log** or **No log** option. If you are administering a server and run ScanDisk regularly to maintain a maintenance record, use the **Append to log** option.

Cross-Linked Files

A cross-linked file occurs when the FAT links two files to the same chain of disk clusters. This error occurs infrequently, if ever. It can happen during power failures that interrupt the computer when it is updating the FAT after an application has written data to a file.

Deleting cross-linked files solves the file system's integrity problem, but it could cost you valuable data. Ignoring the problem is never a good idea. I'm not sure why the option is available. Making copies, the preferred option, rebuilds the cross-linked files so that they all have private copies of the shared clusters. There is a good chance that these clusters should be associated with one of the cross-linked files. Use the error log to learn the file names of the cross-linked files. Use their associated applications to see whether any of them are valid. Retain the valid file and manually delete and replace the others.

Lost File Fragments

Lost file fragments occur more frequently than cross-linked files. Lost file fragments are chains of clusters in the FAT that are not assigned to any file or to the free cluster chain. Power failures that occur while applications have open files can generate lost file fragments.

Remember that a power failure can be operator-induced. As far as the computer is concerned, turning off the computer's main power switch at the wrong time is the same thing as a utility company's power failure.

The **Free** option returns the lost file fragments to the free cluster chain, which repairs the disk system but could cost you some otherwise recoverable lost data. The **Convert to files** option converts lost file fragments into files in the drive's root directory. These files are probably not of much use. But if you suspect that you lost

some data somewhere along the way, fragments of the data might be recoverable from one of those files. It might take the skill of a system consultant to recover the data, but having these files at least gives you that option.

Check Files For

You can tell ScanDisk to check for files with invalid file names and date/time stamps.

Check Host Drive First

If you are scanning a compressed drive, you can tell ScanDisk to check the host drive first. If the host drive passes the media check, you do not need to repeat it for the compressed drive, since the compressed drive really exists as a file on the host drive.

After setting the options, click **OK** on the ScanDisk Advanced Options dialog box and click **Start** on the ScanDisk application. ScanDisk begins scanning the disk, and it displays its progress in the moving bar indicator shown in Figure 15.16.

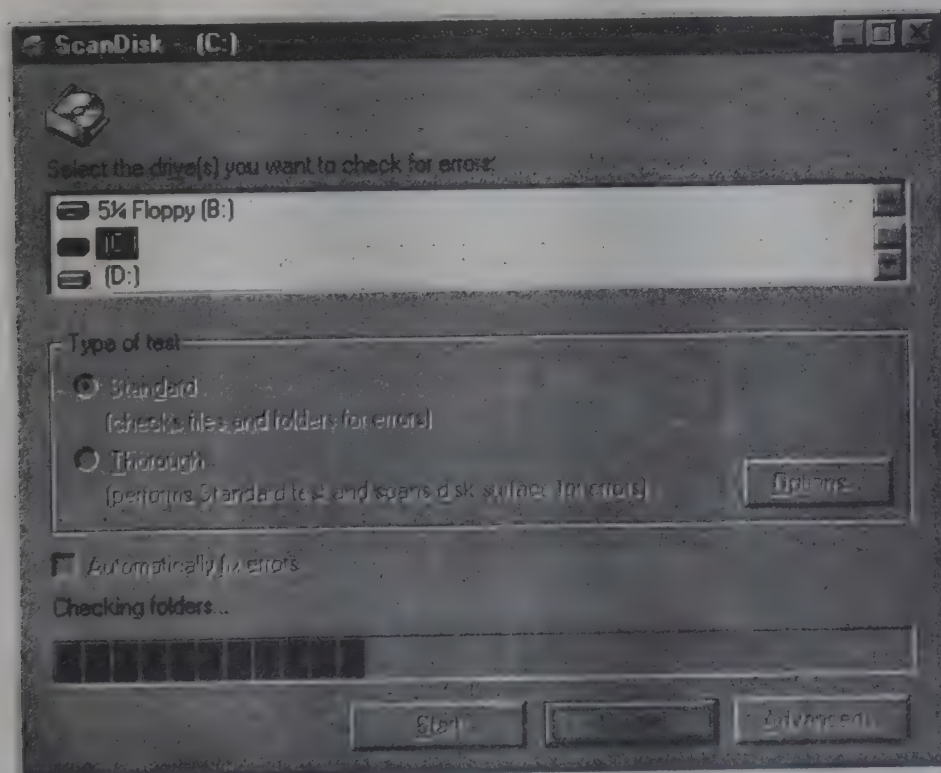


Figure 15.16 Scanning a disk.

If ScanDisk finds errors and you have not checked the **Automatically fix errors** checkbox in the ScanDisk application window, ScanDisk displays the dialog box shown in Figure 15.17.

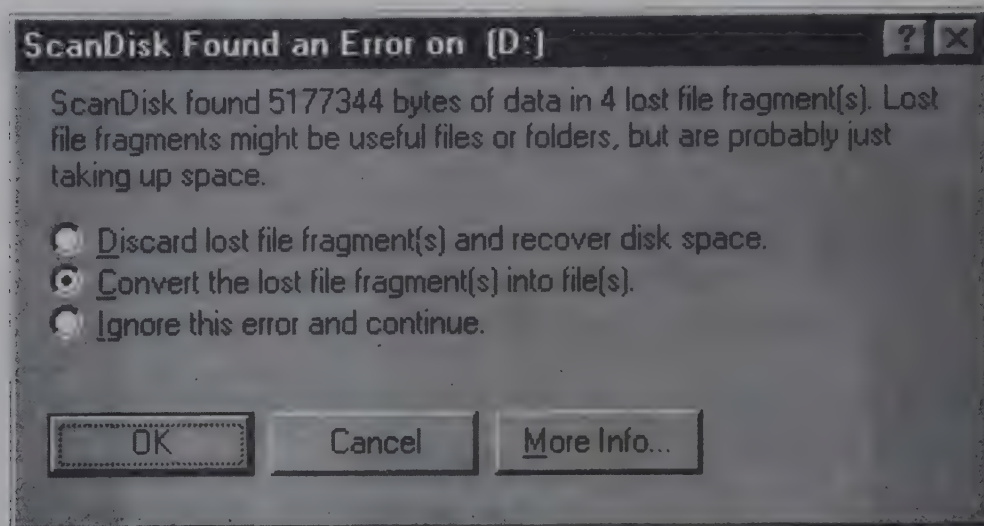


Figure 15.17 ScanDisk reporting errors.

Depending on the action you choose, ScanDisk reports the summary shown in Figure 15.18.

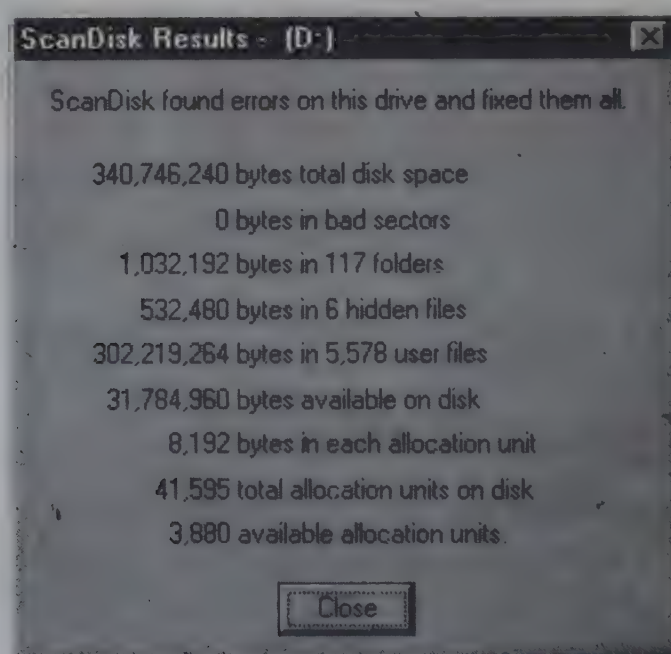


Figure 15.18 ScanDisk summary.

In this example, I told ScanDisk to fix the errors. These errors were lost file fragments, and I told ScanDisk to convert them into files. To view these files, open the drive where the errors occurred. The converted files are in the root directory. Figure 15.19 shows the files created from the lost file fragments that ScanDisk found.

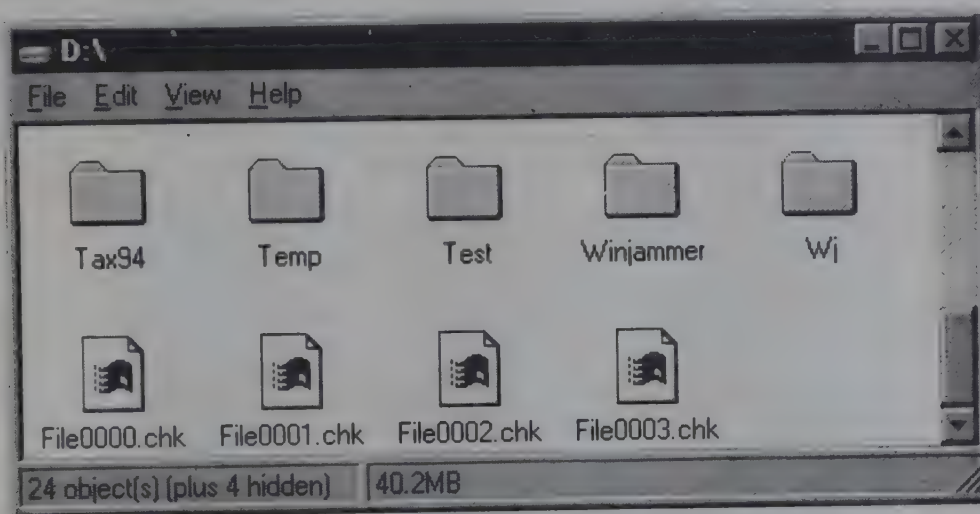


Figure 15.19 Lost file fragments converted to files.

Disk Defragmenter

Toward the beginning of this chapter, a discussion on the disk storage system described how files are constructed of cluster chains. When a file is created, the file system gets the first available free cluster. If the file needs more storage space, the file system gets the next available cluster, which is not necessarily contiguous with the first one. Later changes to files change file sizes. If a file shrinks, its residual clusters return to the free chain. If you delete a file, all its clusters return to the free chain. When the file grows, the additional clusters come from the free chain.

Fragmented Files

The result of this allocation technique is that a disk eventually contains many files made of small, noncontiguous cluster chains scattered all over the disk. The effect of this fragmentation is that the operating system and applications that involve a lot of disk access run more slowly than they would if their files were organized more efficiently.

The Defragmenter

The Disk Defragmenter program scans the disk and relocates files so that every file is one chain of contiguous clusters, all file space is on the outermost tracks, and all free space is on the innermost tracks. It pays to run Disk Defragmenter on all your hard disks every few months.

When you run Disk Defragmenter from the Programs/Accessories/System Tools menu, it begins by asking which drive to defragment. Figure 15.20 shows Disk Defragmenter's Select Drive dialog box.

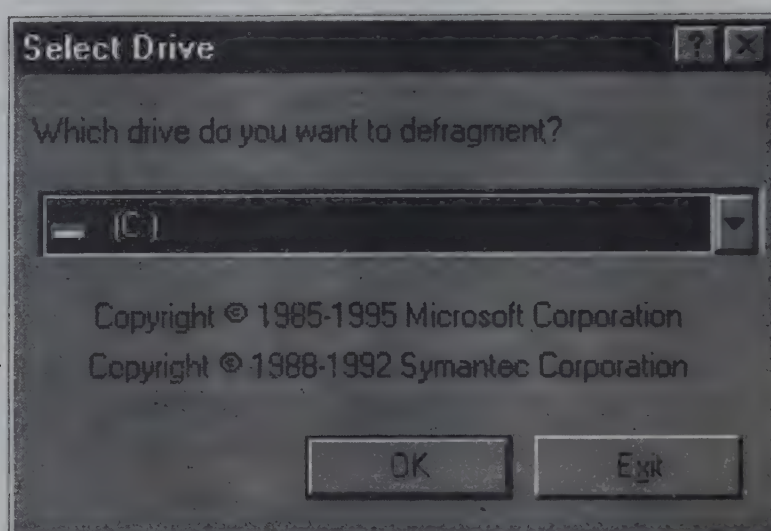


Figure 15.20 Select Drive dialog box.

Select a drive from the drop-down list box and click **OK**. Disk Defragmenter examines the drive you've selected and reports its condition with respect to fragmentation. Figure 15.21 shows the dialog box with that report.

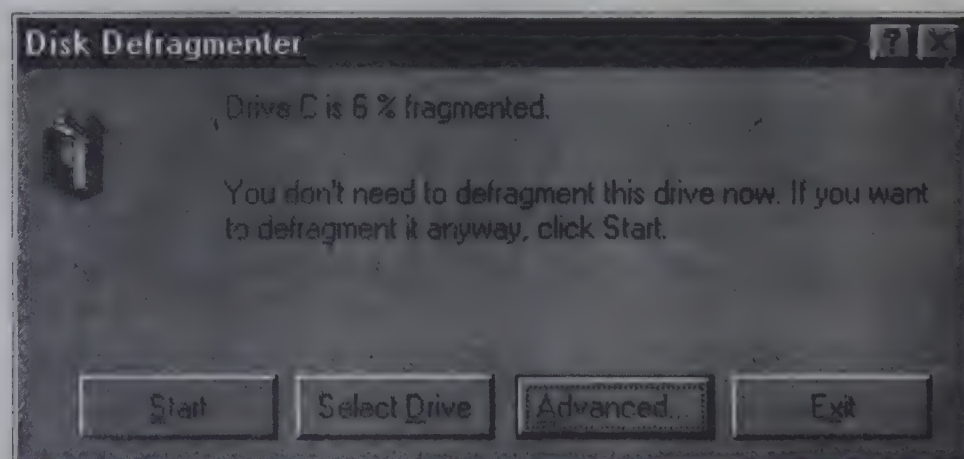


Figure 15.21 Fragmentation report.

My c: drive is in good shape, but we'll defragment it anyway so that you can see how defragmentation works. First, click **Advanced** to view the Advanced Options dialog box shown in Figure 15.22.

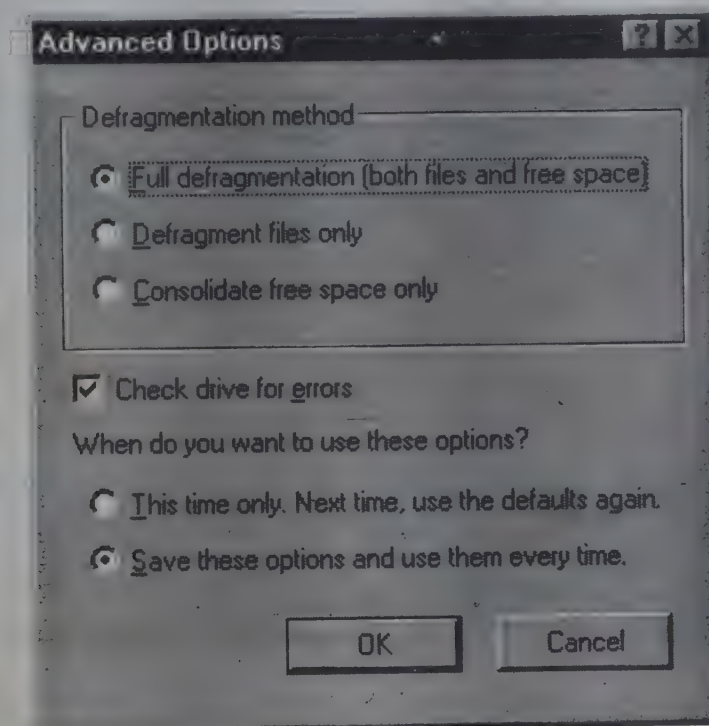


Figure 15.22 Advanced Options dialog box.

A full defragmentation does the whole disk. If you defragment only the files, the free space still has whatever fragmentation it had. You can defragment the free space only, ignoring the files. I can't think of any reason to do anything other than a full defragmentation. You might as well get the whole thing cleaned up. The **Check drive for errors** option tells Disk Defragmenter to scan the disk for errors first. If you already did that with ScanDisk, you can uncheck the checkbox. Click **OK** to save the options, and click **Start** on the Disk Defragmenter. Figure 15.23 shows the defragmentation in progress.

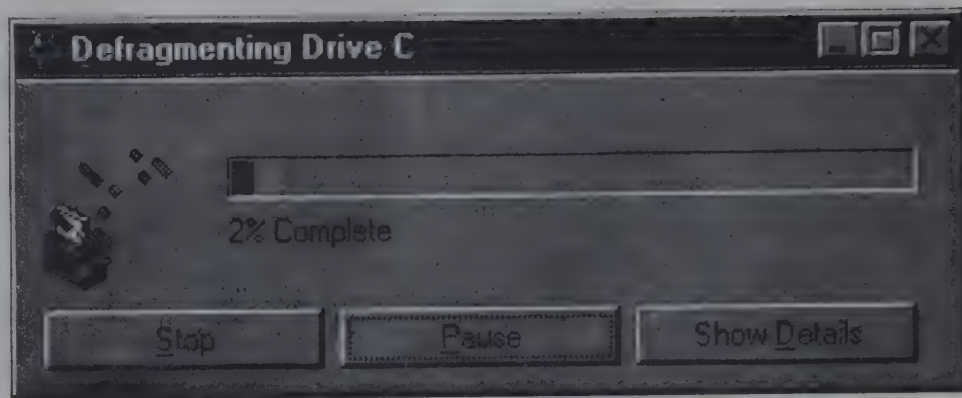


Figure 15.23 Defragmenting.

If you click **Show Details**, you'll get a full-screen display that shows the defragmentation in process. Little boxes representing cluster groups jump all over the screen to indicate how Disk Defragmenter is moving them around. You don't need to see this, but it is fun to watch if you have nothing else to do.

Some Caution

Don't try to run any applications while Disk Defragmenter is running. Don't start a defragmentation while thunderstorms are around unless you have an uninterruptible power supply (UPS) that lets you keep running for a few minutes when the power goes out. If that happens, stop Disk Defragmenter with the **Stop** button, shut down Windows 95, and turn off the computer.

DRIVESPACE

DriveSpace is Windows 95's disk drive compression utility. It can double the effective space of a diskette or hard disk drive. The procedures for compressing and uncompressing diskettes are the same as those for compressing and uncompressing hard disks, so I'll demonstrate hard drive compression and then show you how to mount and unmount a compressed diskette.

Compressing a Drive

Run **DriveSpace** from the Programs/Accessories/System Tools menu to open the DriveSpace application shown in Figure 15.24.

From the DriveSpace application window, select the drive to compress and choose **Compress** on DriveSpace's Drive menu. This action opens the Compress a Drive dialog box shown in Figure 15.25.

Click **Options** to open the Compression Options dialog box shown in Figure 15.26.

You can designate a drive letter for the host drive and the amount of uncompressed data on the host drive. DriveSpace can build a compressed drive with no more than about 300 MB, so if your uncompressed drive is larger than that, it must use the residual as uncompressed storage space. In new PCs shipped with Windows 95 installed, however, DriveSpace is able to compress volumes up to 2 GB in size. Set the options and click **OK**. Then click **Start** on the Compress a Drive dialog box.

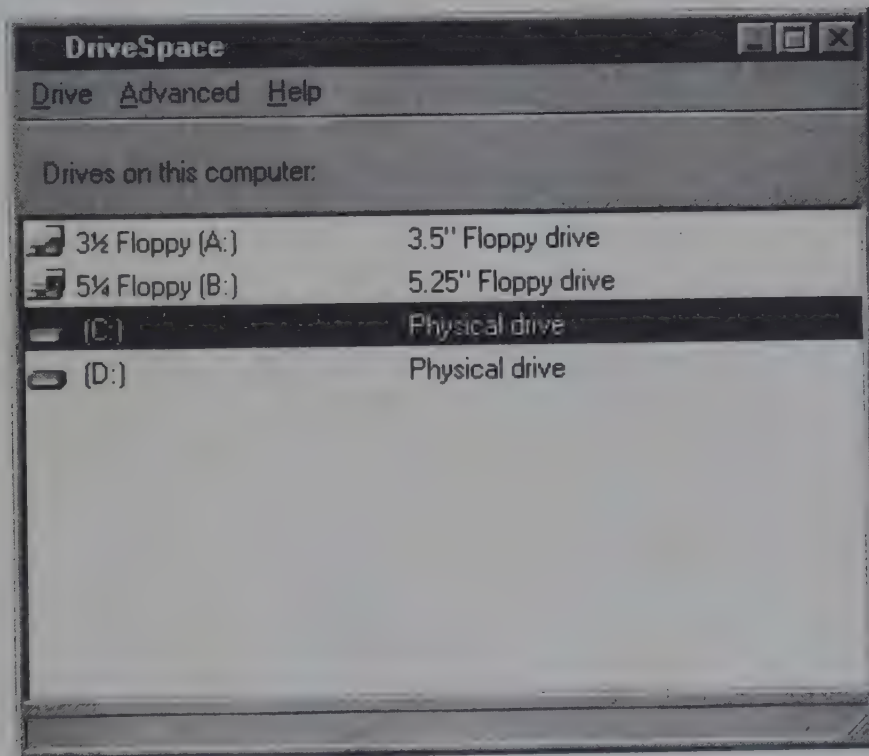


Figure 15.24 The DriveSpace application.

In 1996, Microsoft introduced the fat32 file system with the OSR2 release of Windows 95. It only comes preinstalled on new PCs. If you're having problems with your PC and insert a boot disk, you won't be able to get your files if that disk is from DOS or an older version of Windows 95. Make sure you make a boot disk from the version of Windows 95 that comes on your PC.

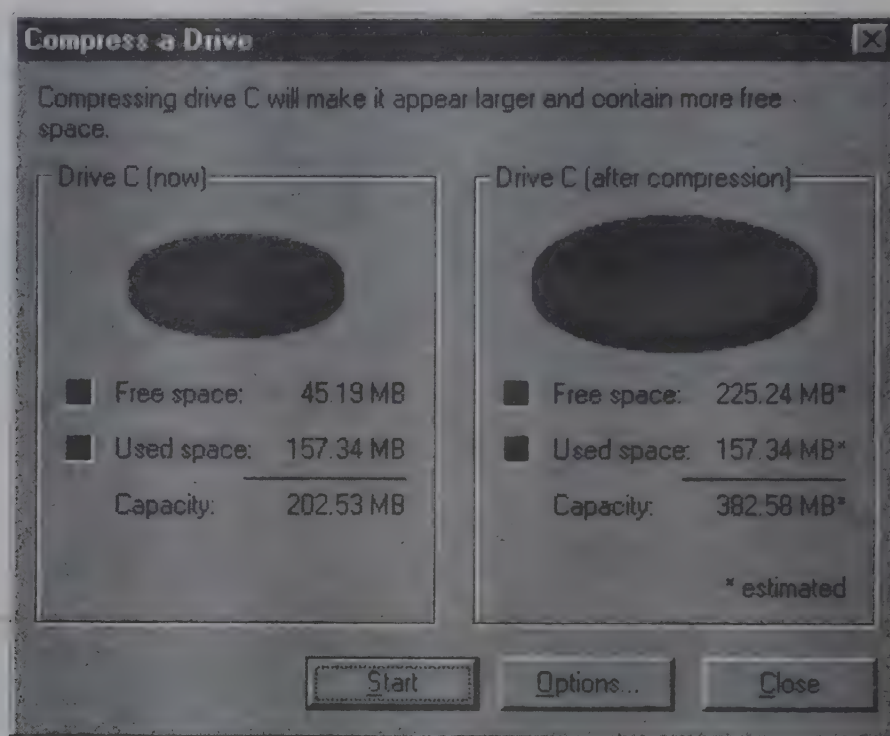


Figure 15.25 Compress a Drive dialog box.

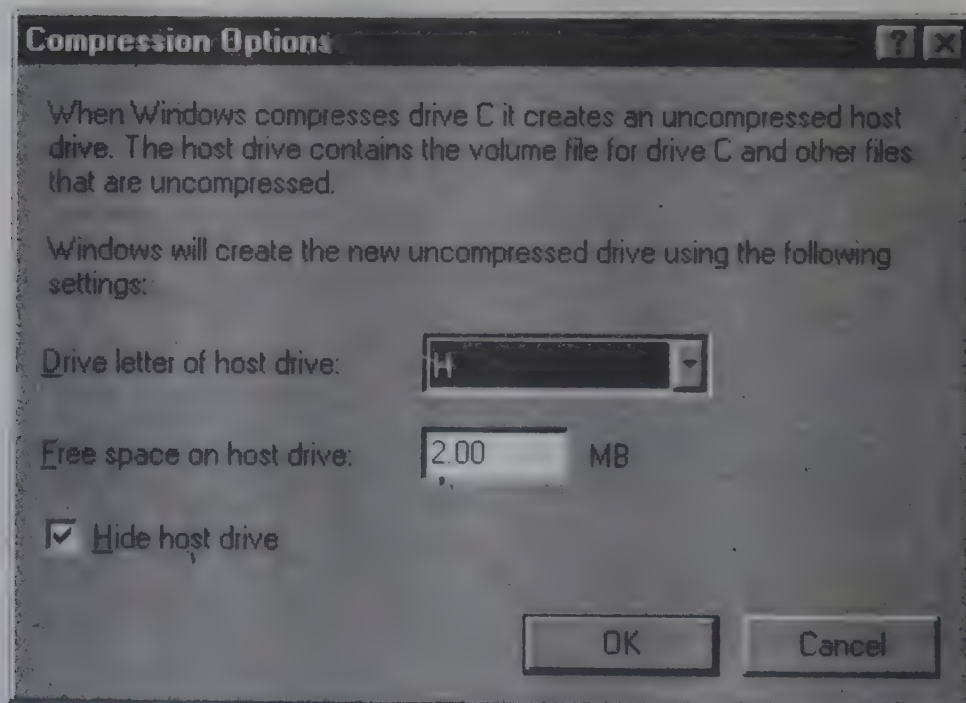


Figure 15.26 Compression Options dialog box.

If you have Windows NT, OS/2, or another incompatible operating system installed on your computer along with Windows 95, DriveSpace observes that condition and displays the caution shown in Figure 15.27.

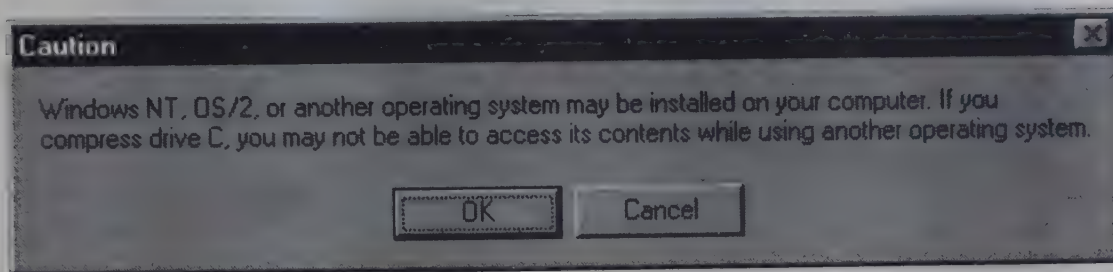


Figure 15.27 A caution about compression.

For some reason, Windows 95 wants you to back up all your files before starting the compression. It gives you the option to do that now. Figure 15.28 is your last chance to do the backup.

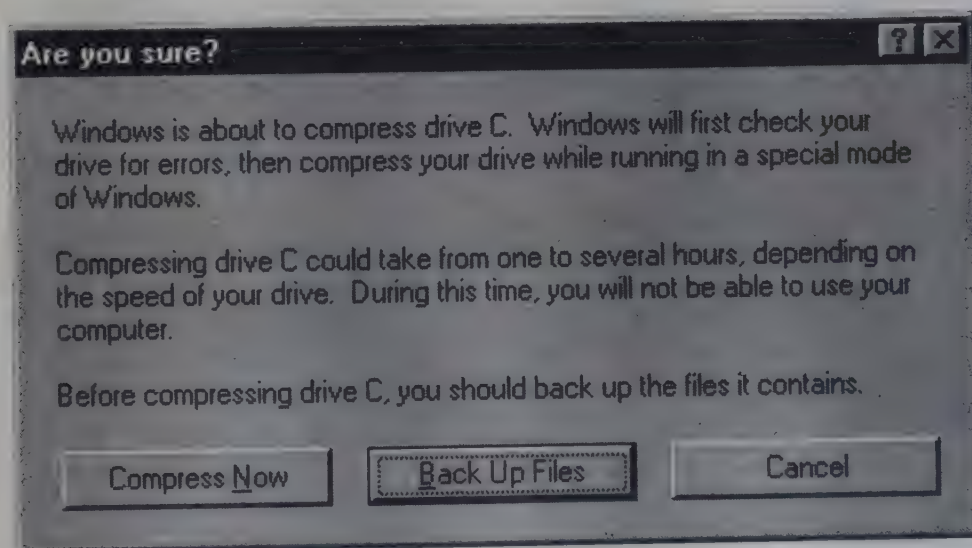


Figure 15.28 Are you sure?

Assuming that you do frequent and regular backups, you can skip the backup routine, at least for this exercise. Click **Compress Now**. DriveSpace displays the Compress a Drive dialog box shown in Figure 15.29.

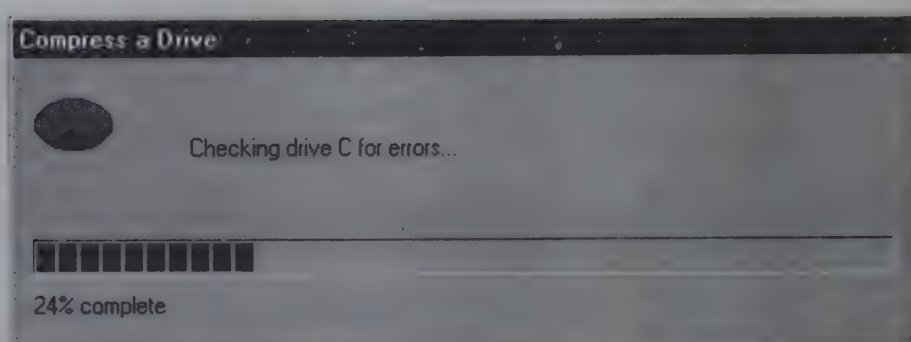


Figure 15.29 Compress a Drive dialog box.

After scanning for errors, DriveSpace gives you one more chance to back out with the Drive In Use dialog box shown in Figure 15.30.

When you click **Yes**, DriveSpace restarts the computer and proceeds with the compression. It uses a dialog box similar to the one shown in Figure 15.29 to display the progress of the compression. The dialog box shows the name of each file as it is being compressed. I can't show you a picture of the actual dialog box because you can't do anything else at your computer while compression is under way, and there is no way for me to capture the screen and get its image into this book as a figure.

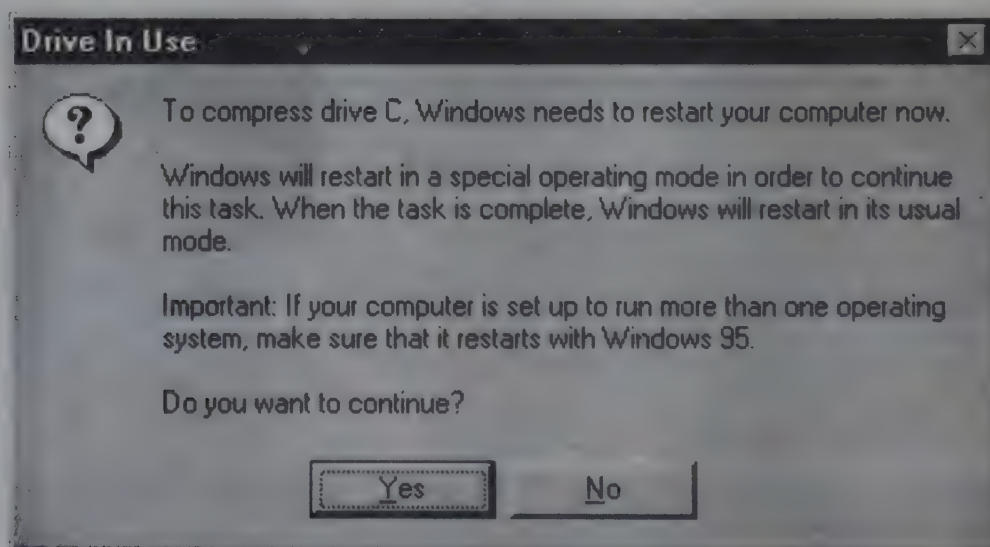


Figure 15.30 The Drive In Use dialog box.

Following the compression pass, which takes a long time, DriveSpace defragments the compressed drive using Disk Defragmenter. Then DriveSpace displays

the results of the compression in the Compress a Drive dialog box shown in Figure 15.31.

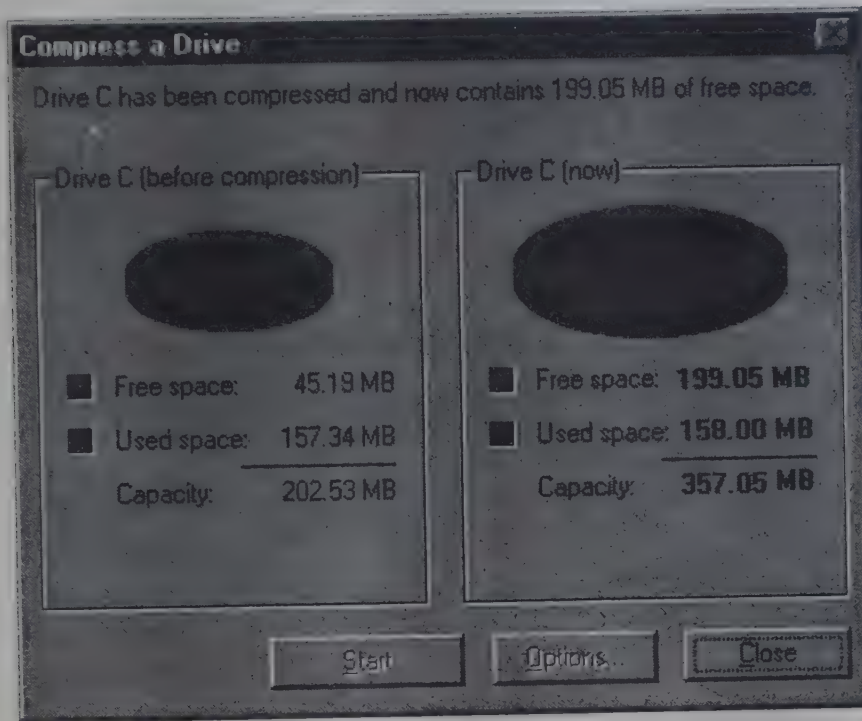


Figure 15.31 Compress a Drive dialog box.

Click **Close**. The system restarts itself with the newly compressed drive installed.

Uncompressing a Drive

You can uncompress a compressed drive if the drive has enough room in its uncompressed configuration to hold all the data on the drive in its compressed configuration.

Why would you want to uncompress a hard drive? I can think of one reason. You want to install a second operating system, such as Windows NT or OS/2, in a dual-boot configuration with Windows 95. You want both operating systems to have access to the same file system. OS/2 and Windows NT do not recognize DriveSpace compression, so a dual-boot, shared file configuration with either of these operating systems is possible only when no disk compression is in effect.

From the DriveSpace application window, select the drive to uncompress and choose **Uncompress** on DriveSpace's Drive menu. This action opens the Uncompress a Drive dialog box shown in Figure 15.32.

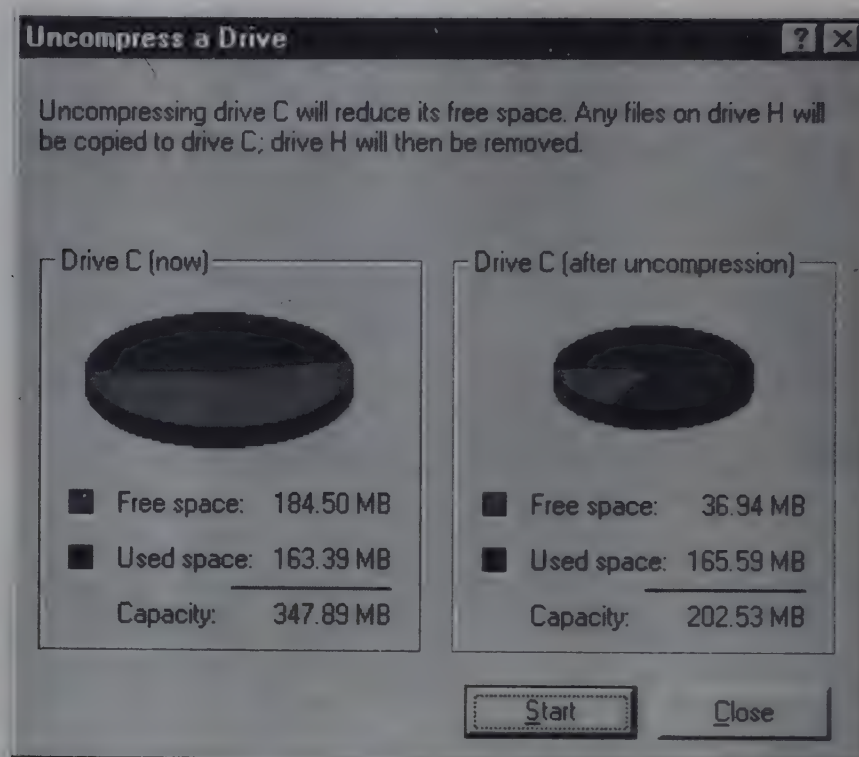


Figure 15.32 Uncompress a Drive.

Click **Start** to proceed. DriveSpace offers you the same backup option for uncompression that it offers for compression (see Figure 15.28). When you get past that point, DriveSpace checks for errors just as it did during compression. Then it restarts your computer and uncompresses the drive.

MOUNTING COMPRESSED DRIVES

When a removable-media disk is compressed, you must *mount* the disk each time you load the disk so that you can use it. It's easy to tell whether a diskette or disk cartridge has been compressed. When you load it into its drive and open it in My Computer or in the Explorer, you see one file on the disk, as shown in Figure 15.33.

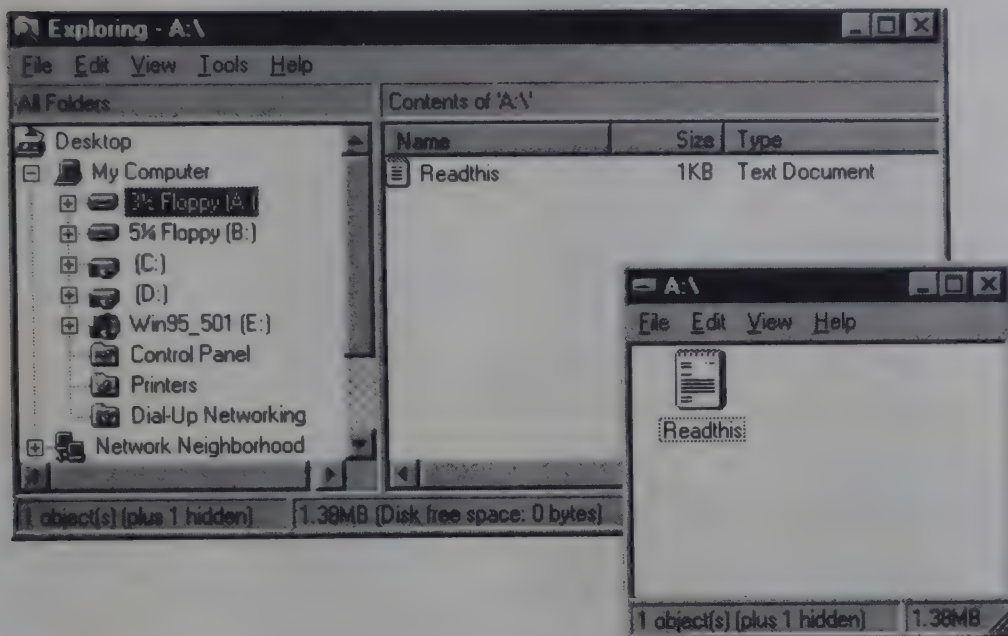


Figure 15.33 Viewing a compressed diskette.

When you double-click the **Readthis** file, it opens Notepad to display the message shown in Figure 15.34.

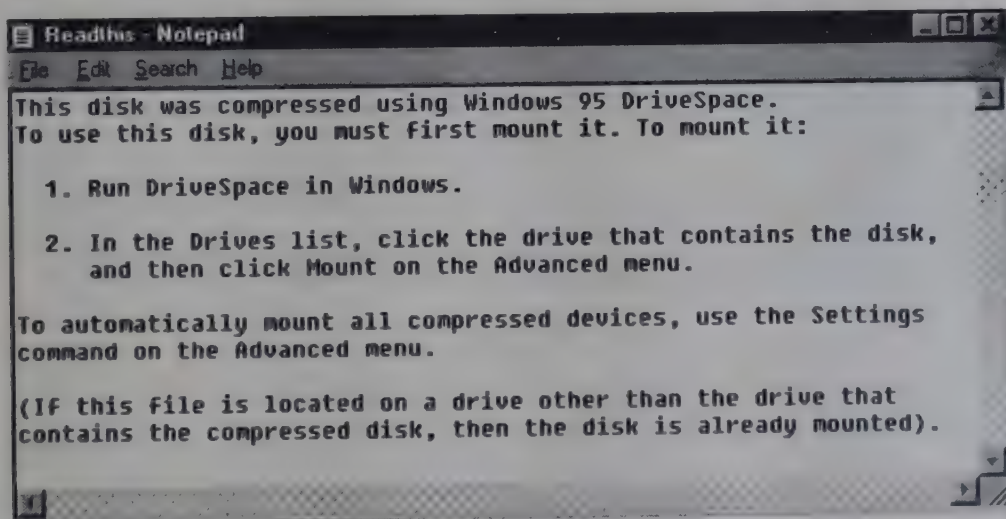


Figure 15.34 Message from a compressed diskette.

Follow the instructions in the message in Figure 15.34 to mount the compressed diskette. You can then open the drive and see the files and folders stored on it.

FORMATTING DISKETTES

Use My Computer or Explorer to format a diskette. Open My Computer from the desktop or Explorer from the Programs menu. Put the diskette you want to format in a diskette drive and right-click that drive in the My Computer window or in Explorer's **All folders** pane. Choose the Format command from the drive's right-click menu.

If the disk drive contains a mounted, compressed disk, you see the message shown in Figure 15.35.

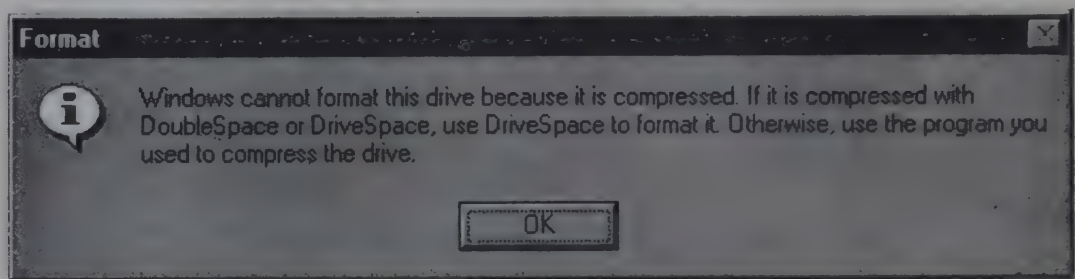


Figure 15.35 Cannot format a compressed disk.

You can, however, format a compressed diskette that is not mounted. DriveSpace does not sense this condition, treating the unmounted compressed diskette as if it were never compressed.

With a proper diskette loaded, choose the **Format** command on the diskette drive's icon in My Computer or in Explorer. This action opens the Format dialog box shown in Figure 15.36.

Select the format options you want and click **Start**. If any windows on your computer or on another computer on the network are open that display your diskette drive, Explorer issues an error message and does not format the diskette. When all such windows are closed, click **Start** to format the diskette.

Use DriveSpace to format a previously compressed diskette. Select the diskette drive in the DriveSpace disk list and put the disk you want to format into the drive. Mount the diskette. Then choose the **Format** command on the Drive menu. Answer **Yes** to the question in Figure 15.37 (assuming the answer is yes).

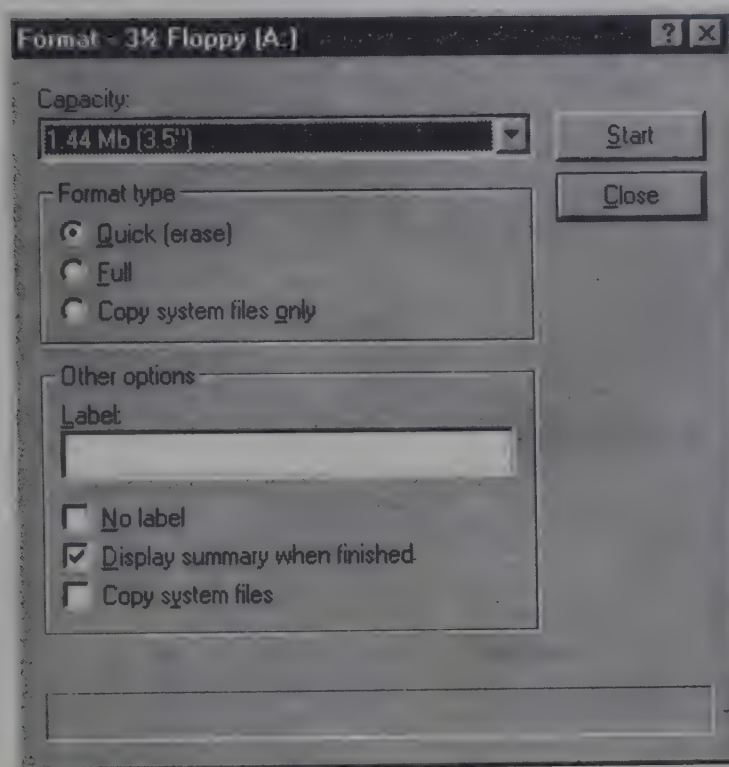


Figure 15.36 Formatting a diskette.

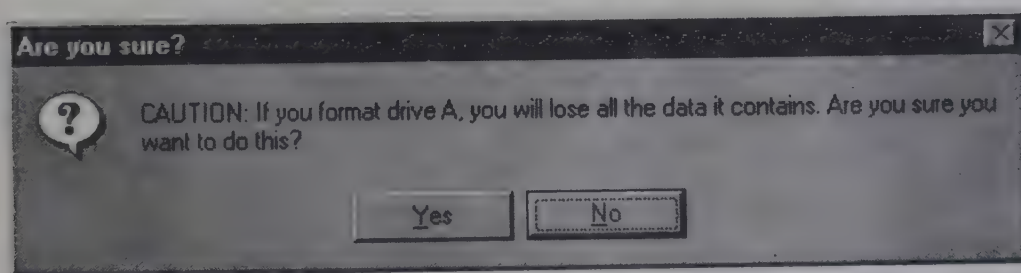


Figure 15.37 Deciding to format a diskette.

DriveSpace literally takes over the computer to format the diskette. Nothing else can happen during that time. The mouse cursor is frozen, and all you can do is wait until the formatting is finished.



CHAPTER 16

Microsoft Internet Explorer

Internet Explorer is Microsoft's answer to World Wide Web navigation. The popularity of the World Wide Web, which enables you to move easily among pages of information by clicking links on the page, has grown astronomically since Windows 95 was introduced.

With Internet Explorer, you can move from Web site to Web site, download files, send and receive E-mail, and get free program updates. You can also use other popular file-retrieval utilities, such as ftp and Gopher, with the help of Internet Explorer. The newest version of Internet Explorer version 4.0, adds a number of features that makes using the Internet a seamless part of your computing tasks. In this chapter you will learn about:

- Internet Explorer 4.0
- Browsing the Web
- Downloading upgrades
- Starting Internet Explorer
- Saving favorite Web sites
- Internet Explorer 4.0 highlights

A FEW INTERNET DEFINITIONS

If you're new to the Internet, some of the terms in this chapter may be unfamiliar to you. Here are the basic definitions you need to know:

Internet: A worldwide system of interconnected computer networks.

World Wide Web: A graphical method of accessing the Internet by moving among pages that can include graphics, text, sound, and animation.

ftp: An acronym for file transfer protocol, ftp is a method of sending and retrieving files to and from various sites around the world.

Gopher: A powerful search tool that enables you to locate and download files on the subjects you specify.

Web page: One page of information on the World Wide Web. The first page of an individual, company, or organization is called the *home page*.

links: Users move among pages of information on the World Wide Web by clicking links on the page. A link can be text, graphics, a button, or a sound object. The user is taken to the page to which the item is linked when he or she clicks the link.

URL: An acronym for universal resource locator, a URL is the Web name for a Web site's address. Microsoft's URL is <http://www.microsoft.com/>.

WHERE DO YOU GET INTERNET EXPLORER?

Earlier versions of Internet Explorer, pre-4.0 were available from a variety of sources. Version 2.0 came with Microsoft Plus! and version 3.0 was made available on Microsoft's Web site and on all major on-line services. Version 4.0 is also available from various on-line sources, but the most reliable place to get it is Microsoft's free download page on its Web site. Go to <http://www.microsoft.com/msdownload/default.asp>.

WHAT VERSIONS OF INTERNET EXPLORER ARE AVAILABLE?

Depending on who you talk to, you'll find all versions of Internet Explorer—2.0, 3.0, and 4.0—out there in cyberspace. But each new version has significantly enhanced the features in the previous version, and the program is free, so

why wait? The current version is 4.0 and it is available by downloading from Microsoft's Web site. Also Microsoft advises upgrading at least to version 3.02 to safeguard your computer from Web sites created by malicious programmers that might damage your machine.

INSTALLING INTERNET EXPLORER 4.0

When you are ready to install Internet Explorer 4.0, begin at the Microsoft Web site:

<http://www.microsoft.com/ie/ie40/download>

This screen tells you about Internet Explorer 4.0 and explains the download process (see Figure 17.1). Read through the various offerings and make these decisions:

1. Do you want to download the browser only or the full shell with browser?
2. Do you want to do a standard, enhanced, or full installation?

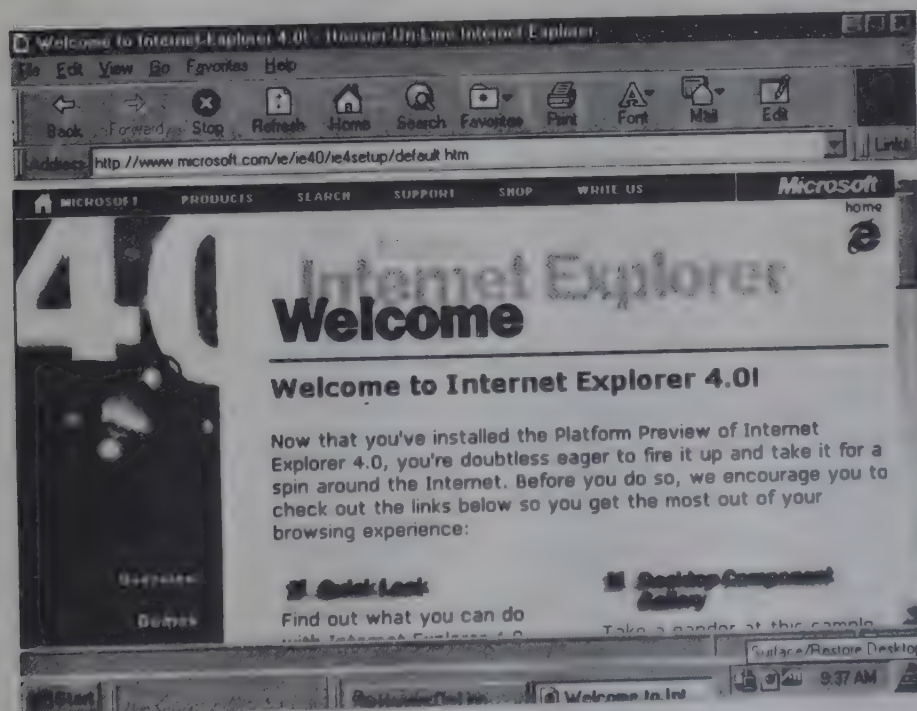


Figure 17.1 Starting with the Downloads page.

The first question—to shell or not to shell—determines whether you download a fully functional Internet Explorer 4.0 that enables you to navigate the Web, send and receive E-mail, and more, or whether you get a state-of-the-art Web integration package that puts the Internet in touch with all sorts of tasks you perform from your desktop. Note: The figures in this chapter show Internet Explorer 4.0 with Shell Integration installed. Microsoft recommends that you first choose the browser-only option and then come back to the Web site after you have installed Internet Explorer 4.0 and add the shell enhancement features. This approach lightens the load on the Web site and helps you get up and surfing on the Web more quickly.

The second question—whether you want a standard, enhanced, or full installation—affects how full-featured your version of Internet Explorer will be. Different features are included with the different versions, and each version requires different amounts of hard disk space, so consider the choices carefully before you decide.

Scroll down to the gray box and click the **Setup Wizard** link. You then are asked to choose the language you want. Make your choice and click **Next**. The next page asks you to choose a location from which you want to download the Setup Wizard.

When you've selected what you want, click the **Next** button. You then choose the language you want (in this case, US English). Click **Next**.

You see a page that lists the vendor, location, and program file (in this case, for North America). Click the program file name to begin the download process. A prompt will ask you whether you want to install the Setup Wizard now or to save the version as a file. Make your choice and the process begins. If you elected to install the program as it was downloaded, you will be prompted to restart your computer so that the new changes can take effect.

If you elect to have Internet Explorer installed directly on your system—as opposed to saving the program as a file you install later using the Setup Wizard—keep your Internet connection open, double-click the Setup Wizard icon, and the installation process begins.

If you saved Internet Explorer to a file you can later install on your PC, you wait until the downloading process is complete—be prepared to wait; it took more than 2 hours on my system. Then you can disconnect and run the Setup Wizard (by double-clicking the **Setup** icon in the folder you specified) at any time.

A LOOK AT INTERNET EXPLORER 4.0

If you already have Internet Explorer on your computer, chances are it's version 2.0 or 3.0. After you install Microsoft Plus! or download Internet Explorer from the Internet, the Internet Explorer icon appears on your desktop (see Figure 17.2). The icon may be placed differently on your system, depending on how you've arranged your desktop. You may also see different icons that reflect the applications and utilities you have installed.

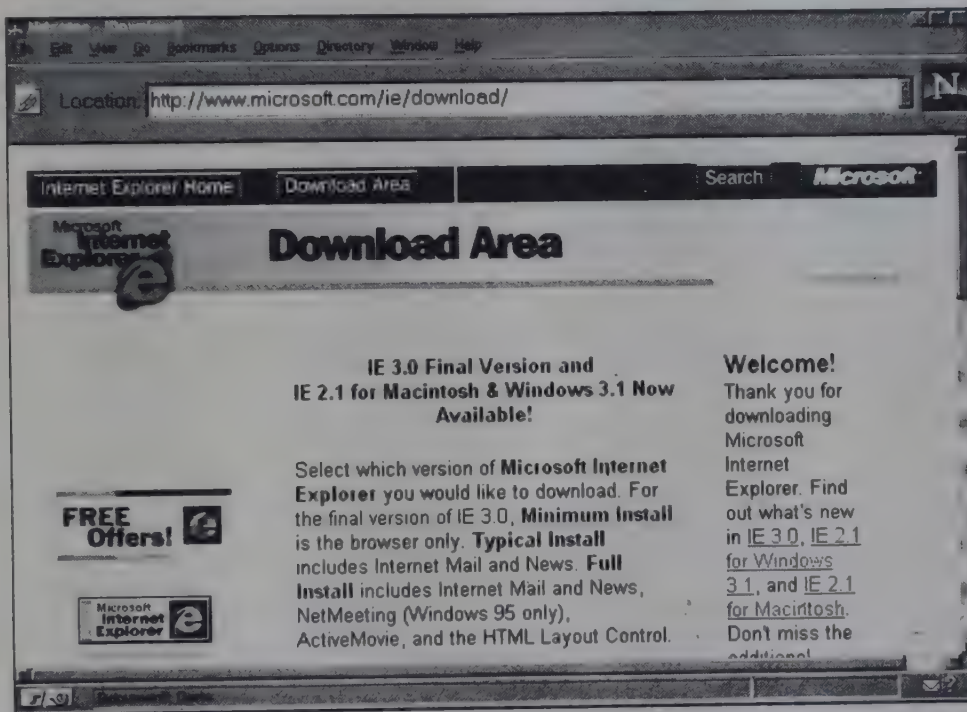
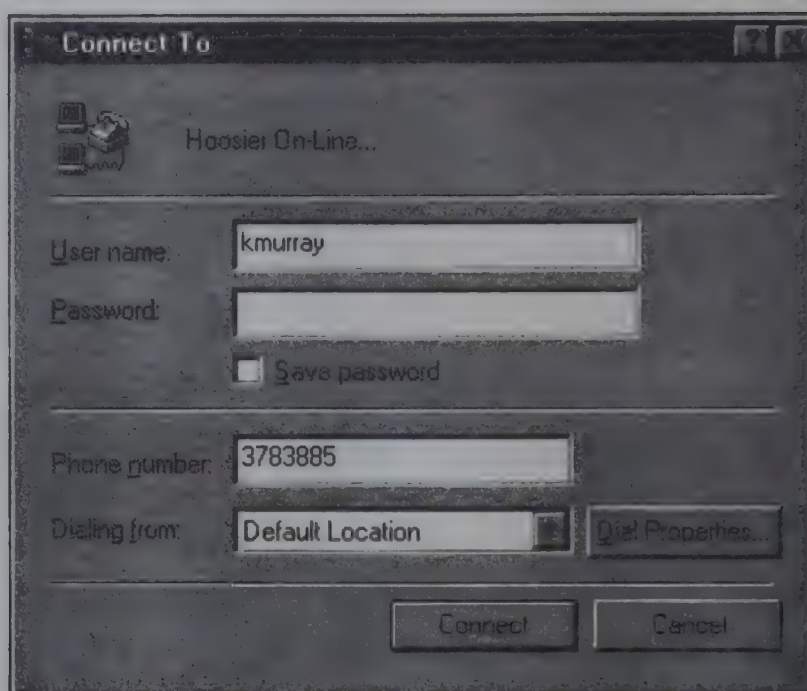


Figure 17.2 The Internet Explorer icon.

Starting Internet Explorer 4.0

Once Setup is complete, double-click the Internet icon on your desktop to start Internet Explorer 4.0. The Connect dialog box appears so that you can enter the necessary information; click Connect (see Figure 17.3). When Internet Explorer 4.0 opens, you are taken directly to the Internet Explorer Web site (<http://www.microsoft.com/ie/ie40/setup>). Here you can preview, play with, and learn about the program's various offerings.



*Figure 17.3 Double-click the **Internet** icon to start; then fill in the **Connect** box and click **Connect***

The Internet Explorer 4.0 Window

The Internet Explorer 4.0 screen is easy to figure out (see Figure 17.4). The title bar at the top of the window tells you the name of the application and the name of the Web page you are viewing. The menu bar shows the choices you have for menu selection. The toolbar provides you with the tools you need to move from page to page and save, print, and work with Web pages. The address of the page you're viewing appears in the Address text box at the top of the window.

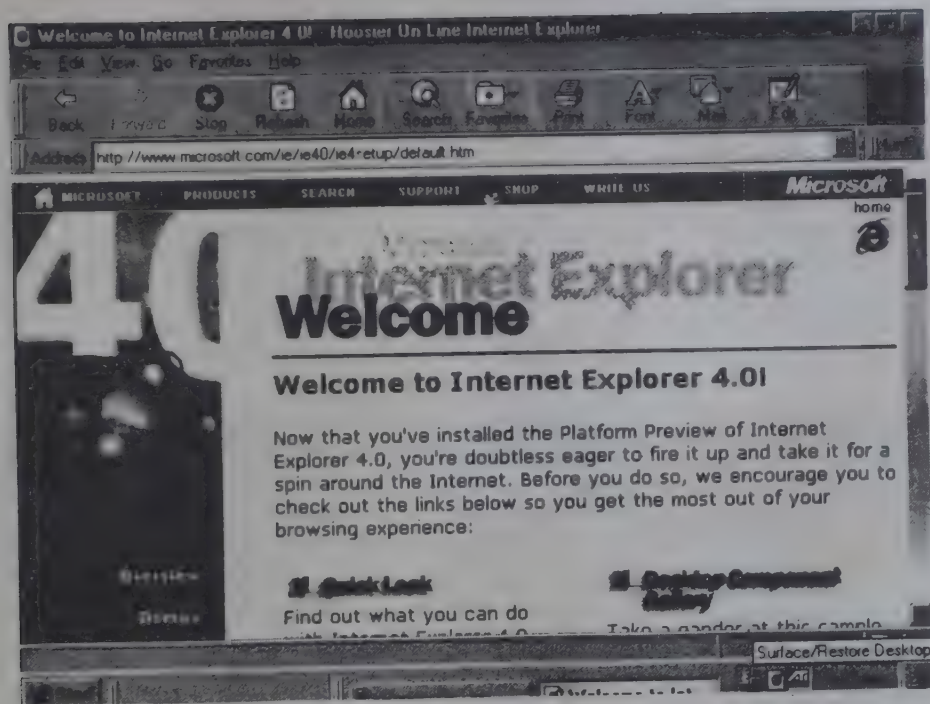


Figure 17.4 You can start exploring at the Internet Explorer homepage.

Browsing the Web

The World Wide Web is unique in its approach to the Internet. You can move from page to page by clicking links embedded in the document. A link can be text, a picture, a button, or any other object on the page. You'll recognize a link in two different ways:

- Text that is set up as a link is set off in a different color. For example, the text phrase "Visit our page now!" might be highlighted blue, indicating that it is a link.
- When you move the mouse pointer over a link, the URL in the Address box changes to show where you *will* go if you click the link.

You begin browsing by finding and clicking the links that interest you. If you want to move ahead to the next link, you can also click the **Forward** button in the toolbar.

Moving Directly to a New Page

If you know the URL, or address, of a Web page you want to visit, you can enter it directly in one of two ways:

- You can open the File menu and choose **Open**. The Open dialog box appears, as shown in Figure 17.5. Type the address carefully—make sure you have the spelling and punctuation right—and click **OK**.

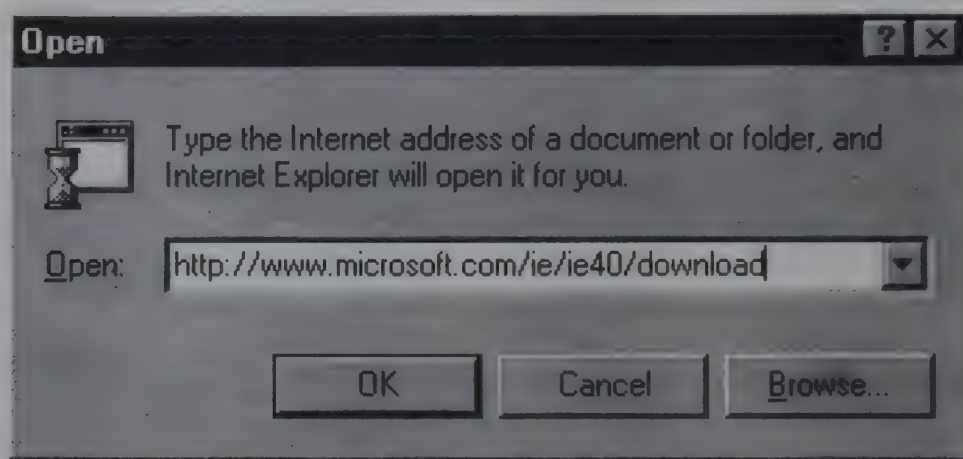


Figure 17.5 The Open dialog box enables you to move to a specific page.

- You can double-click in the Address text box in the Internet Explorer window. The current entry is highlighted, and the word "Address" changes to "Open." Now type the address of the page you want to visit and press **Enter**.

If you downloaded the full version of Internet Explorer 4.0, complete with shell integration, you also have the option of adding the Address bar to your Windows 95 Taskbar. In that way, you can surf the Web from your desktop at any time.

Getting Back

Buttons in the Internet Explorer toolbar enable you to go back the way you've come. The **Back** button takes you back to the last page you viewed; you can follow the progression all the way back to the place you started. You can also click the **Open Start Page** button to go directly to the first page you accessed.

Another way to go back to places you've already been is to open the File menu and choose the page from the list of pages shown at the bottom of the

menu. Additionally, the **More History** option on the File menu will show you a listing of all the sites you've visited, so you can return to any site by clicking it.

Marking Favorites

With a world of information to explore, it's important to be able to bookmark places you'd like to visit again. When you get to a page you really like, add it to your Favorites folder by opening the Favorites menu and choosing **Add to Favorites**. Or you can click the **Add to Favorites** button in the toolbar.

When you want to go to one of your favorite sites, either click the **Open Favorites** button on the toolbar or open the Favorites menu and choose **Open Favorites**. A window appears, showing you the sites you've saved in your Favorites folder. Double-click the icon that represents the site you want to visit.

Internet Explorer 4.0 adds Smart Favorites, which lets you know when your favorite sites have been changed. For more about this feature, see "Internet Explorer 4.0 Highlights" later in this chapter.

Saving Files and Objects

In most cases, the person or company responsible for maintaining the Web site you visit will simplify the process for downloading a file by providing on-screen instructions. You might see a button that says **Click here to download the file** or something equally clear.

You may want to capture an entire Web page as a file so that you can refer to it later. When the page is displayed, open the File menu and choose **Save As**. A dialog box appears so that you can enter a name for the file. Click **Save** to continue and return to the page.

You can also use the right-click method to download graphics and other objects. Position the mouse pointer on the object and right-click. Make your choice from the popup menu. The object is saved directly to a file or to the Windows clipboard, depending on the option you selected.

Searching the Internet

One of the greatest things the Internet offers is the ease with which you can search for and locate information. The Internet Explorer uses a variety of search techniques to find the data you want, no matter what the subject.

Begin the search process either by clicking the **Search the Internet** button on the toolbar or by opening the Go menu and choosing **Search the Internet**. A Microsoft search page that contains various search methods appears in a split window, allowing you to perform a search without leaving the current page. You can then choose the type of search you want to do, enter the necessary words, and start the search. The Web sites found by the search will be listed for you so that you can follow the links to the information you are looking for.

Exiting Internet Explorer

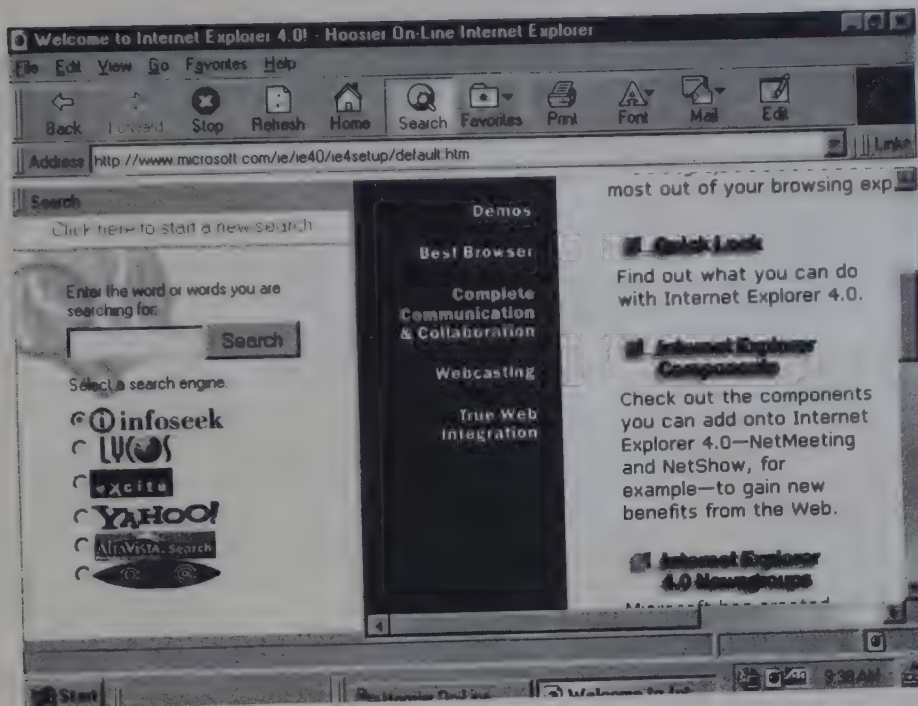
When you are finished Web surfing—be careful, it's addictive—you log off Internet Explorer either by opening the File menu and choosing **Exit** or by clicking the close box.

INTERNET EXPLORER 4.0 HIGHLIGHTS

At first glance, you won't see much difference between Internet Explorer 3.0 and Internet Explorer 4.0—but wait until you begin exploring! Many new changes make it easier than ever to use the Internet. Without much fuss, you can integrate the Internet into your daily tasks with a click of a button. Most of the new features are designed to help you either get the information you want faster and easier or create Web content in innovative ways. This section gives you an overview of the features you will want to explore.

The SearchBar

Do you do a lot of searching on the Internet? Most users do. Now you can use the new SearchBar feature to keep the search information at your fingertips. No more sitting and waiting on a Yahoo page—now you can bring the search results right to you, displaying in a portion of a split window on the screen (see Figure 17.6).



*Figure 17.6 The SearchBar appears in a split window when you click the **Search** tool in the toolbar.*

The Changeable Address Bar

The new changeable Address bar brings up Smart Favorites, displaying in button style your favorite Web sites. You simply click the Address bar to change the display; click the **Links** button, to the right of the **Address** button, to return to the Address text box. Figure 17.7 shows the Address bar changed to show Smart Favorites buttons.

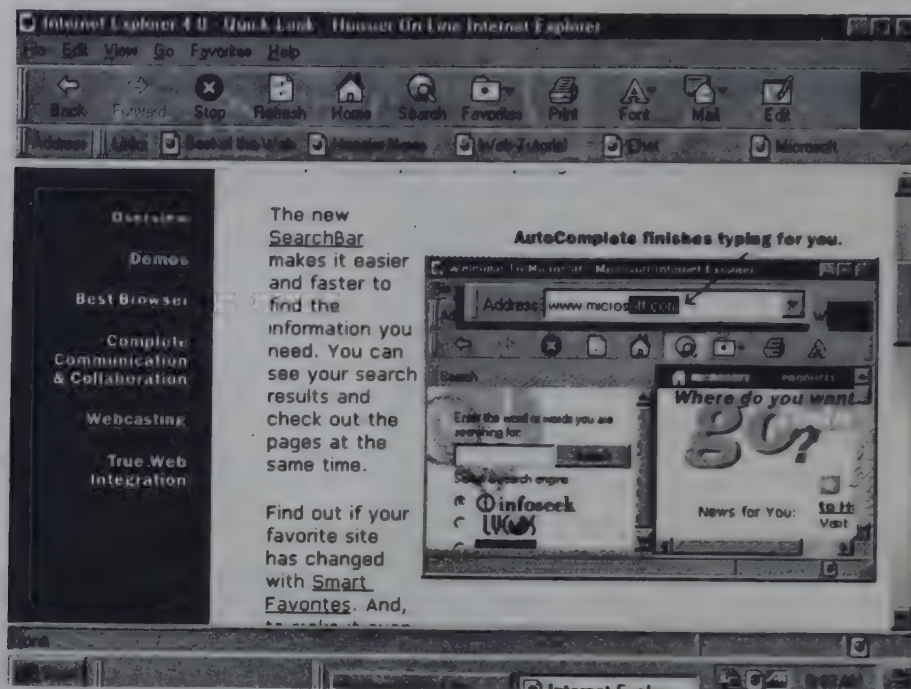


Figure 17.7 The Address bar can show your favorite sites or the traditional text box.

Smart Favorites

Do you have Web sites you like to visit often? If you have used a browser before, you know that you can bookmark, or save, the addresses of your favorite pages so that you can return to them again and again without having to retype the URL the Address line. Now Internet Explorer takes things a step or two farther by building in Smart Favorites. When you add a Web site to your Favorites folders, Internet Explorer 4.0 knows to check these sites and let you know when the content has changed. This new technology, called WebCheck, helps you to keep a handle on the changing Web. You don't waste time checking out sites that haven't been modified. You know where—and when—to visit.

How does Internet Explorer let you know? When you display the sites in your Favorites folder, changed sites show a red "gleam" in the upper-left corner of the item. When you position the pointer on the site icon (but don't click the mouse button), a pop-up window tells you when you last visited, when the site was updated, and what's new about the site (see Figure 17.8).

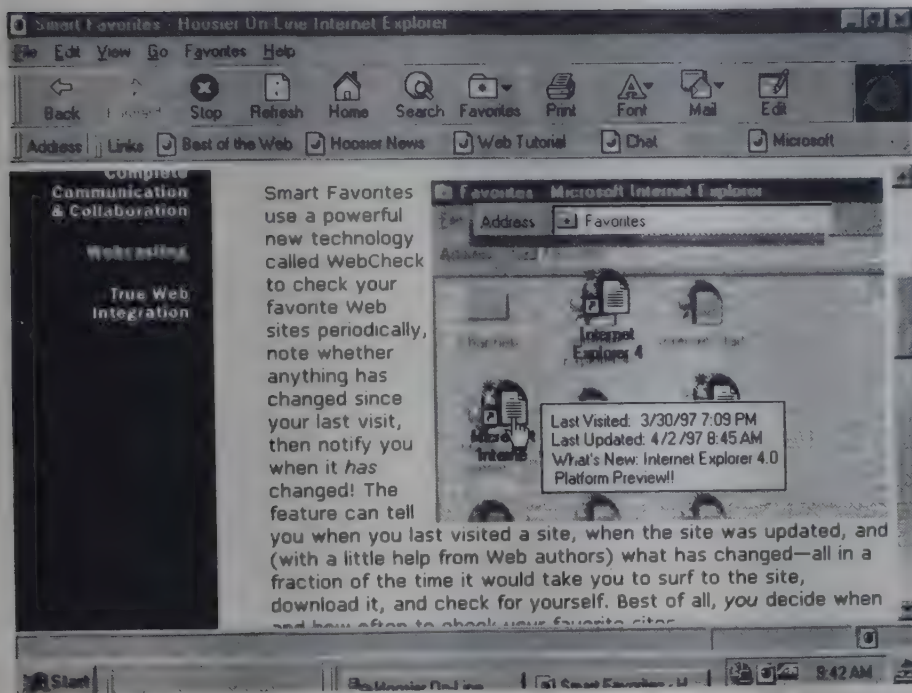


Figure 17.8 Smart Favorites lets you know when your favorite sites have been changed so that you can visit them again.

Site Subscriptions

The next level of to-your-door Web visitation is available in Site Subscriptions. Similar to Smart Favorites, this feature lets you know when sites have been changed and delivers those sites to your computer.

How do you subscribe to a Web site? Simply click the **Favorites** button on the toolbar and position the mouse pointer on **Subscriptions**. A cascading menu appears, as shown in Figure 17.9. Click **Subscribe** to subscribe to the current site.

If you want to set options for the way Internet Explorer notifies you of the updates, click the **Options** button in the cascading Subscriptions menu. The Global Properties dialog box appears. The option in the bottom portion of the **General** tab is checked; this puts a small **Subscriptions** icon on the Windows 95 Taskbar. In the **Dial Up** tab, you can elect whether you want Internet Explorer to connect to the Internet and check your subscribed sites automatically (see Figure 17.10). Simply enter the necessary dialing information and click **OK**. You then use the Daily Schedule or Weekly Schedule to determine when you want Internet Explorer to update those sites.

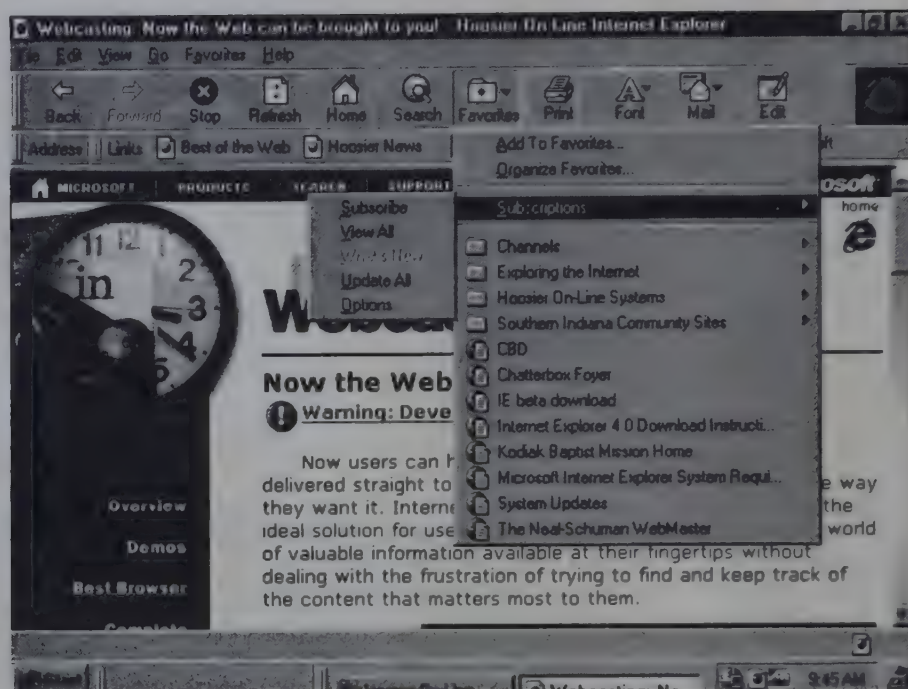


Figure 17.9 Subscribing to a Web site.

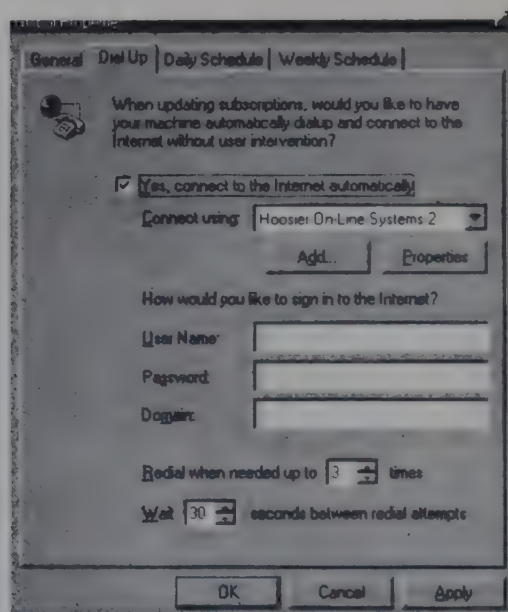


Figure 17.10 You can have Internet Explorer connect to the Internet and check your subscriptions automatically.

Offline Reading

If you find a site you really like, you can mark it and read it later when you're off-line. To use the Offline Reading feature, go to a site you want to save, open the Internet Explorer File menu, and choose **Browse Offline** (see Figure 17.11). Later, when you want to visit the site, open the file and browse to your heart's content.

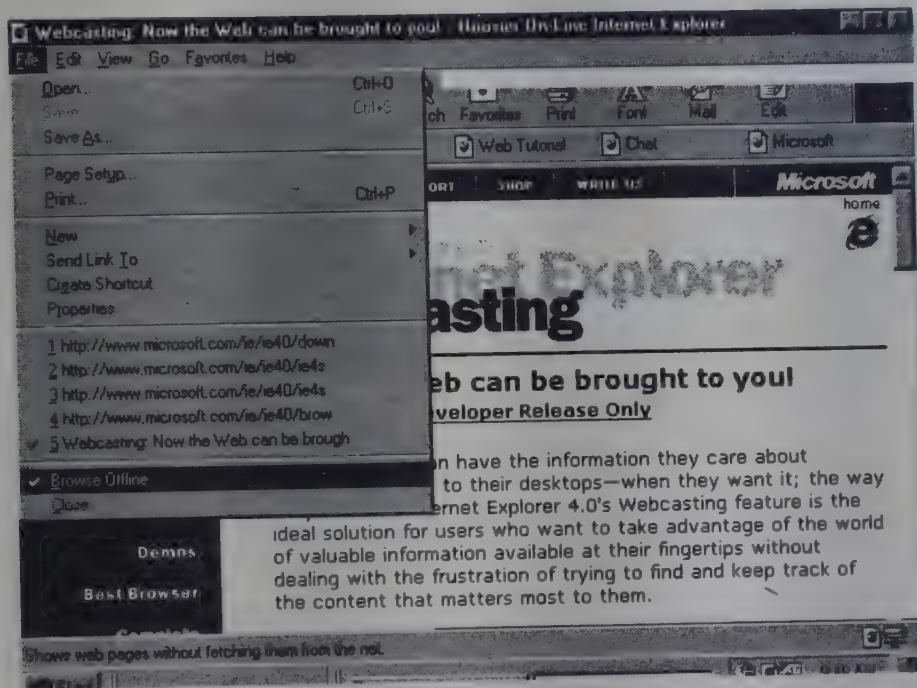


Figure 17.11 With Offline Reading, you can browse the Internet off-line.

If you have turned on **Browse Offline** and then go to a site where off-line reading is not available, Internet Explorer will let you know. You will have the choice of remaining connected to the Internet or logging off and browsing the site off-line.

Messaging with Outlook Express

The Internet Mail that was included with Internet Explorer 3.0 has been replaced with Outlook Express, a full-featured mail and messaging component that lets you do extraordinary things. You can send E-mail messages that include Web pages, music, graphics, animations, and more. At a click of the mouse, you can get access to an Internet white pages directory where you can find friends, family, and co-workers across town or across the world. You can

also gather newsgroup messages, search for messages, and write and read your messages off-line.

Starting Outlook

To start Outlook Express, click the **Mail** button on the Internet Explorer toolbar and choose **Read Mail**. The Outlook Express window appears, as shown in Figure 17.12. Notice the similarity to the Windows Messaging (formerly Microsoft Exchange) Inbox.

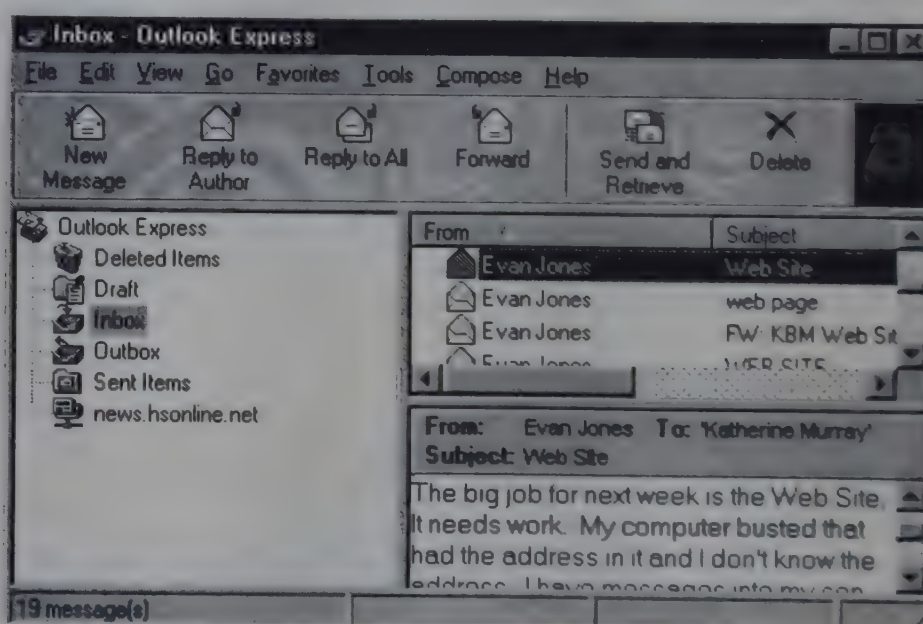


Figure 17.12 The Outlook Express window gives you access to mail or newsgroup messages you're composing, reviewing, or sending.

The Outlook Inbox

The folders in the Outlook Express folders window should be familiar; the Inbox stores your incoming mail. The Outbox holds your outgoing mail. Sent Items lists the items you've sent, and Deleted Items keeps a record of the items you've deleted. Now you also have a Draft folder to store items you're working on, and a newsgroup icon that connects you with one or more of your favorite newsgroups.

Creating a New Message and Finding People

To start a new message, click the **New Message** button. The New Message window appears as shown in Figure 17.13. Click the **To** button to select the recipient from your address book. If you don't know the E-mail address of the person you are writing to, click the **Find** button in the Select Recipient dialog box to display the Find People dialog box (see Figure 17.14). Choose a search engine by clicking its icon in the Search list. Enter the information you do know about the person and click **Find Now**. If you are already on-line, the search will begin immediately. If you are off-line, you will be prompted to enter the necessary information to connect to the Internet, and then the search begins.

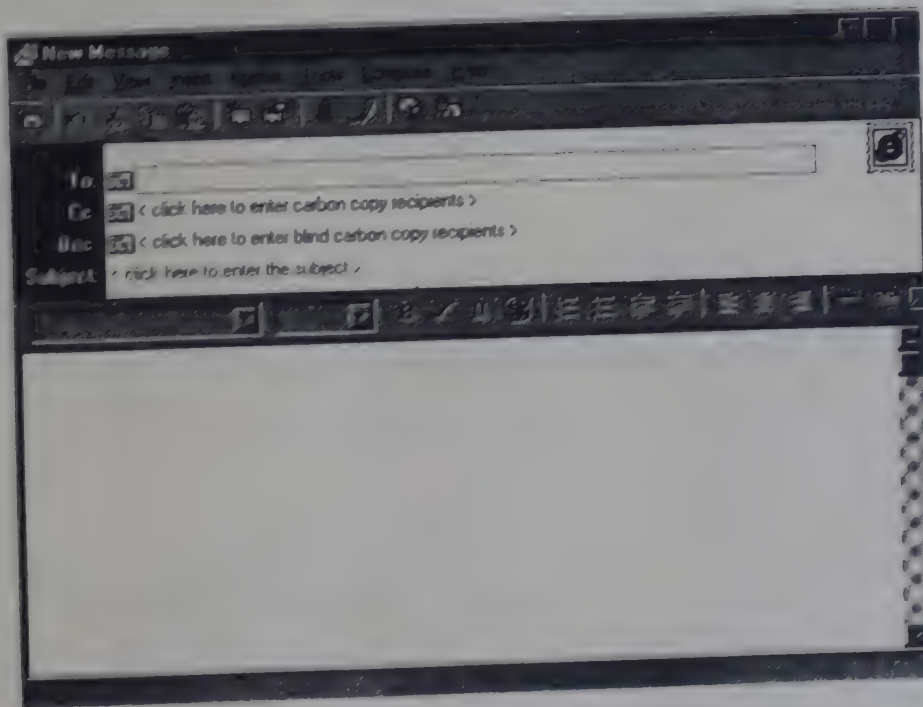


Figure 17.13 The New Message window includes tools for formatting text the way you want it.

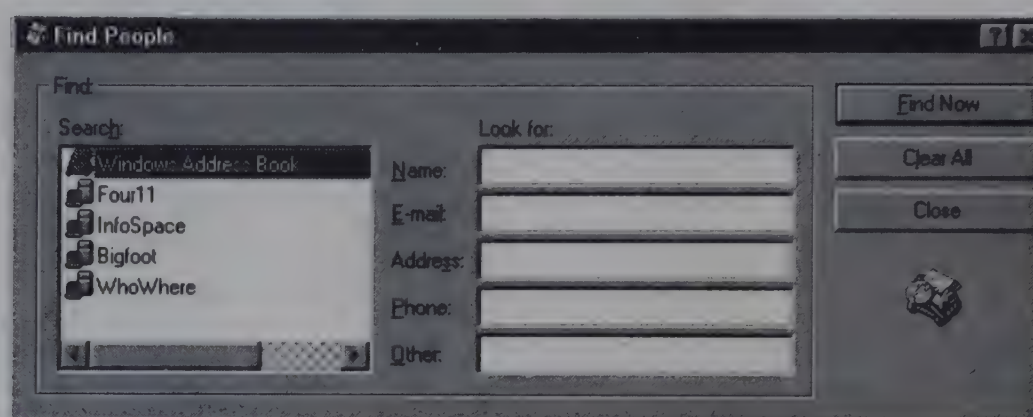


Figure 17.14 You can use one of four major search engines to locate people on the Internet.

When you've found the recipient you seek, add the information to the Address Book by clicking the **Add to Address Book** button that appears in the bottom of the Find People dialog box. You can then close the Select Recipients dialog box and type your message. You can change the font, font size, style, and alignment by clicking the tools on the toolbar.



NOTE

To use your old Exchange Address Book or one you created in Eudora or Netscape, open the File menu, choose **Import**, and click **Address Book**. Choose the type of address book you want to import and click **Import**.

Sending Messages

When you're ready to send the message, click the **Send** button at the left end of the toolbar. A pop-up box appears, telling you that the message is being sent to the Outbox. When you are ready to deliver the message, open the Tools menu and click **Send**.

INTERNET EXPLORER 4.0 ADD-ON FEATURES

When you first downloaded Internet Explorer 4.0, you had two choices for the version you wanted to install. Microsoft recommends you download the standard version—without the shell—first and then run Setup again later to download only the shell features. (This is recommended because of the heavy Internet traffic and the huge rush to download version 4.0.) If you down-

loaded Internet Explorer 4.0 without the shell, your version will not have three features that bring the browser to your desktop and integrate it with the way you do your daily work:

- The Active Desktop
- The Desktop Address bar
- Single Explorer

There are also other features you may not have installed, depending on which version of the installation you selected. Full installation includes all features except the shell integration utilities; enhanced installation includes a fewer number; and standard installation includes fewer still. But take heart—adding on is easy. Run the Setup Wizard again, and it will automatically figure out which features you have and which you need and will take you to the right Web spot for feature downloading.

The Active Desktop

Internet Explorer 4.0 makes your desktop an active place in which you can customize the background and add Web elements, called desktop components, that keep you up-to-date with what's happening on the Web. You can keep an eye on your stocks, get notification about E-mail, or have headlines delivered to your desktop.

The Desktop Address Bar

You can add an Address bar to your Windows 95 Taskbar so that you can move directly to a Web site no matter what other program you may be using.

Single Explorer

For users who work on company networks, or intranets, and also access the larger world of the Internet, having one browser that can do it all is an important capability. Internet Explorer 4.0, offers that feature. Using Single Explorer you can move in and out of your company network and onto the Internet in one smooth motion.

FrontPad

Microsoft's FrontPad program is a stand-alone Web-authoring program that uses wizard technology to help you create your own personal Web page. The FrontPad included with Internet Explorer 4.0 is a scaled-down version of Microsoft FrontPage that provides the functionality you need to create your Web site. To add FrontPad to the browser-only version of Internet Explorer 4.0, run the Setup Wizard again and follow the on-screen prompts. Once you have FrontPad installed, you can use the **Edit** button on the Internet Explorer toolbar to edit any page you view using Internet Explorer.

NetMeeting 2.0

The first version of NetMeeting was available with Internet Explorer 3.0. This on-line conferencing tool, which has been significantly enhanced in Internet Explorer 4.0, enables you and friends, family, or co-workers to create your own chat room for meetings in cyberspace. You can view and share data files, run programs, and even write on an electronic "whiteboard" to send notes to attendees.



CHAPTER 17

Legacy Computing

I saved legacy computing for one of the last chapters because eventually it will be overtaken by events. *Legacy* computing is the use of older software in a newer operating system. This chapter discusses running MS-DOS and Windows 3.1 applications under Windows 95. You will learn about:

- Program Manager
- File Manager
- MS-DOS
- MS-DOS applications

THE LEGACY OF LEGACIES

Legacy systems are here for a while, but not to stay. Eventually they will go away, for two reasons: First, most people will accept the Windows 95 operating environment as their preference. Second, virtually every major legacy application vendor is converting its programs to operate under Windows 95 using the Windows 95 user interface conventions. The desire for legacy computing will wane, and its necessity will fade.

In the meantime, legacy applications hang on. Many people will use them until new programs replace them. This chapter teaches you how to run legacy applications from legacy environments during this interim period. You do not need to abandon your old applications just because you change operating systems.

Earlier versions of Windows maintained support for MS-DOS and its applications by providing the *DOS box*, a mode of processing that emulated traditional MS-DOS with a command-line user interface to run legacy MS-DOS applications in Windows by taking over the screen. Windows 95 continues that tradition with an improved MS-DOS operating mode.

Although Windows 95 offers an improved user interface, many people are comfortable with the Windows 3.1 Program Manager and File Manager and want to stick with them, at least for the time being. These legacy programs are still available under Windows 95.

PROGRAM MANAGER AND FILE MANAGER: WHO CARES?

If you are not familiar with Windows 3.1, you might not be interested in Program Manager or File Manager, and you can skip to the MS-DOS discussion later in this chapter. If you are not familiar with them but want to learn more, you can read my book *teach yourself... Windows 3.1*, published by MIS:Press in 1992. That book describes both programs in more detail than I provide here.

If you use Program Manager and File Manager in Windows 95, stay in the closet. Your co-workers will make fun of you.

INSTALLING THE WINDOWS 3.1 INTERFACE

During Windows 95 installation you are given the option to perform a custom installation. If you select the custom installation mode, one of your choices is to install either the Windows 95 user interface or the Windows 3.1 Program Manager user interface. Most people will choose the Windows 95 user interface. The improved interface is one of the reasons they are switching. Others will prefer to make the change gradually, relying on their experience with Windows 3.1 to ease the transition.

The Setup program implies that if you choose the Windows 3.1 interface, your windows, dialog boxes, icons, and so on, will all look the way they did under Windows 3.1. Not so. That option simply puts a shortcut to the Program Manager application into the Start/Programs/Startup menu, which means that when you start the computer, Program Manager automatically runs as the first application. The rest of the user interface is going to be 100% Windows 95.

If you chose to install the Windows 95 user interface or if you did not perform a custom installation, you can install the Windows 3.1 user interface at a later time. Follow these instructions.

From the Start menu, choose **Programs** and then **Startup**. Unless somebody has put something in Startup, the menu is empty. An empty menu displays one line with an (**Empty**) label. Your goal is to put into the Startup menu a shortcut to the Program Manager application. All programs in the Startup menu run automatically when you start the computer.

From the Start menu, choose **Settings**. Click **Taskbar** to open the Taskbar Properties dialog box. Click the **Start Menu Programs** tab to change to that page, as shown in Figure 18.1.

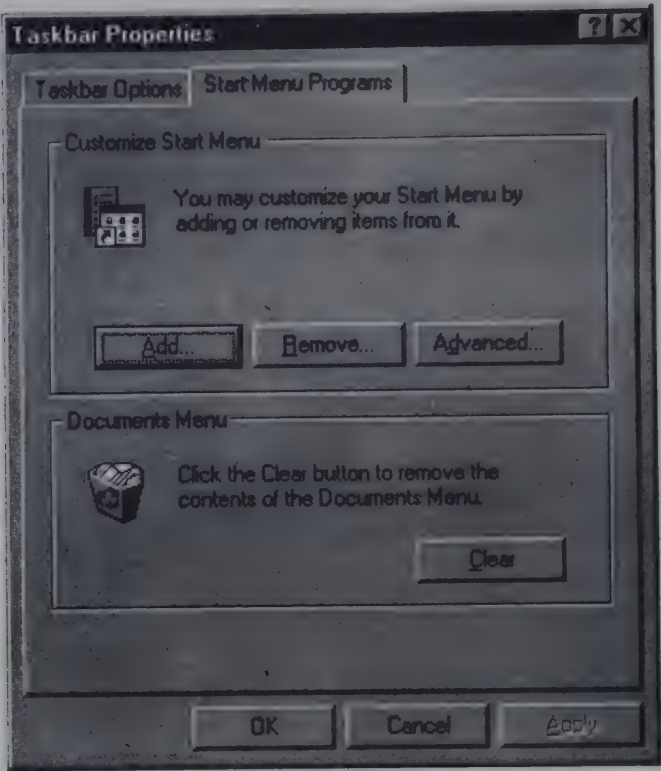


Figure 18.1 The Start Menu Programs page.

Click **Advanced** to open Explorer to the Start menu, as shown in Figure 18.2.

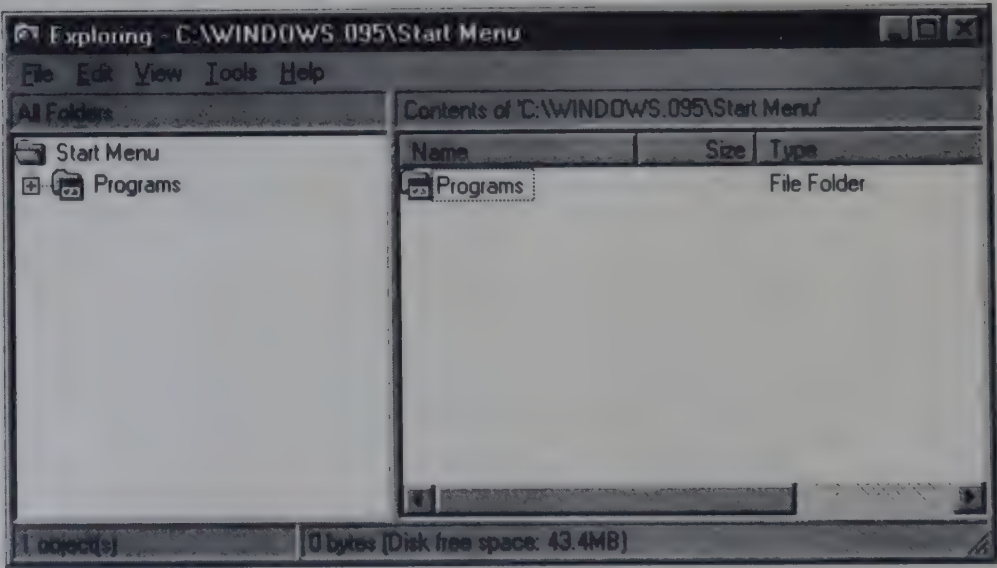


Figure 18.2 Exploring the Start menu.

Expand the Programs tree by clicking its + icon. Then click the **Startup** entry in the tree to open the Startup menu, as shown in Figure 18.3.

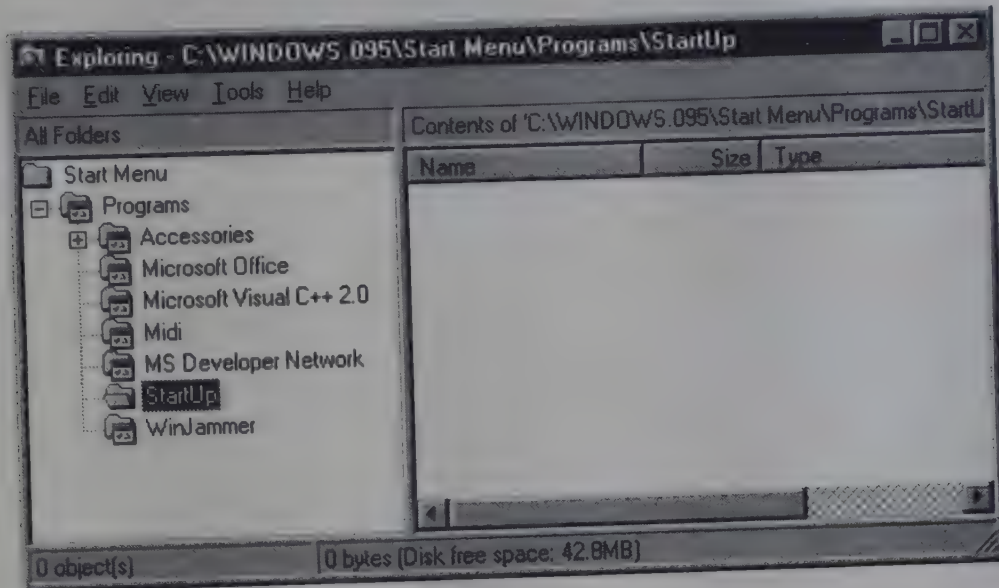


Figure 18.3 Exploring the Startup menu.

The Startup menu is empty, so the Contents window pane is blank. Right-click the **Contents** pane and choose **New** on the right-click menu. Click **Shortcut** in the New cascaded menu to open the Create Shortcut dialog box shown in Figure 18.4.

Type the path to the Program Manager executable file. In Figure 18.4, I typed `c:\windows\progman.exe`. If you installed Windows 95 somewhere other than `c:\windows`, substitute the correct drive and directory. The program's executable file name should still be `progman.exe`. Click **Next** to open the Select a Title dialog box shown in Figure 18.5.

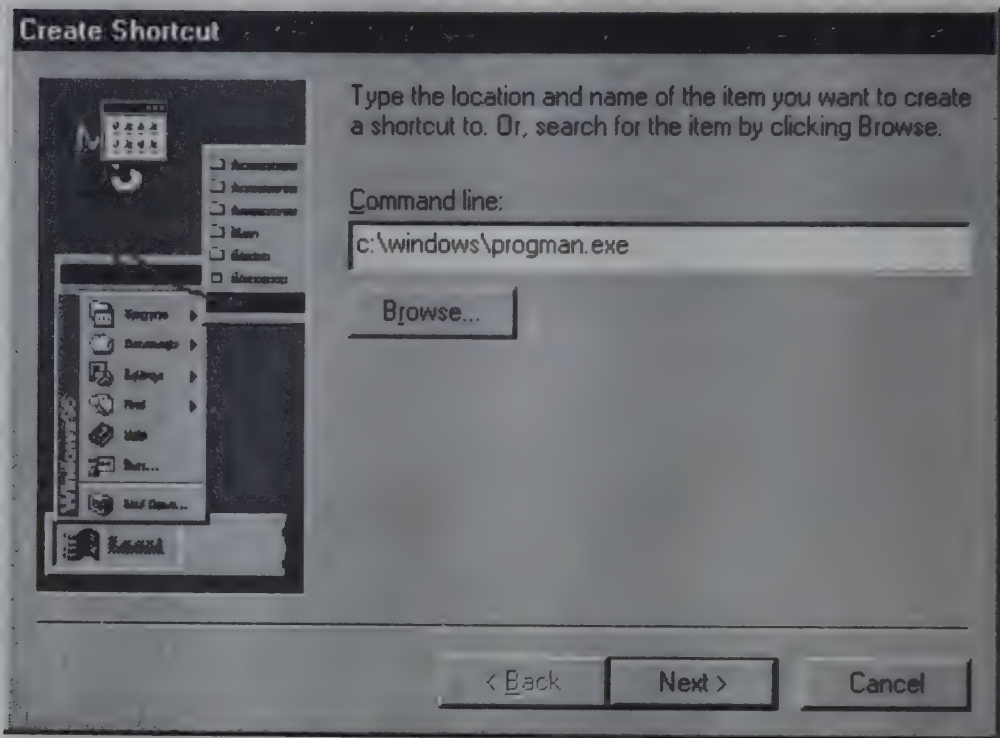


Figure 18.4 The Create Shortcut dialog box.

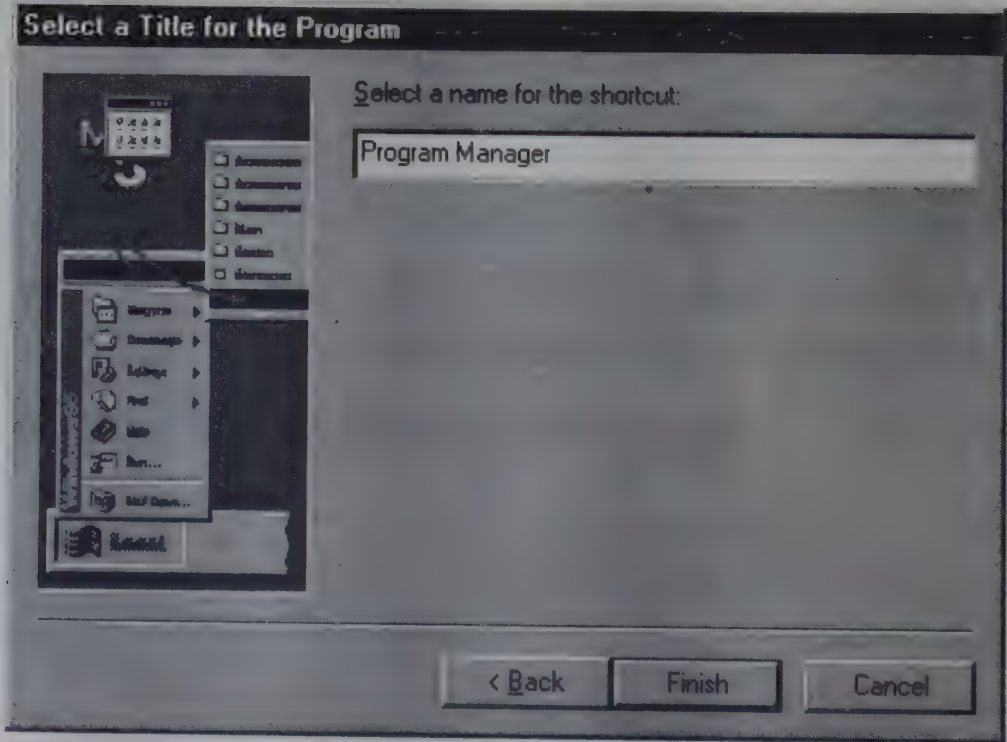


Figure 18.5 Select a Title dialog box.

Type the name **Program Manager** as Figure 18.5 shows. Click **Finish**. The Explorer window changes to show the newly installed Program Manager shortcut in the Startup menu. Close the Explorer window. The next time you start Windows 95, Program Manager will run automatically.

PROGRAM MANAGER

Figure 18.6 shows the Program Manager application.

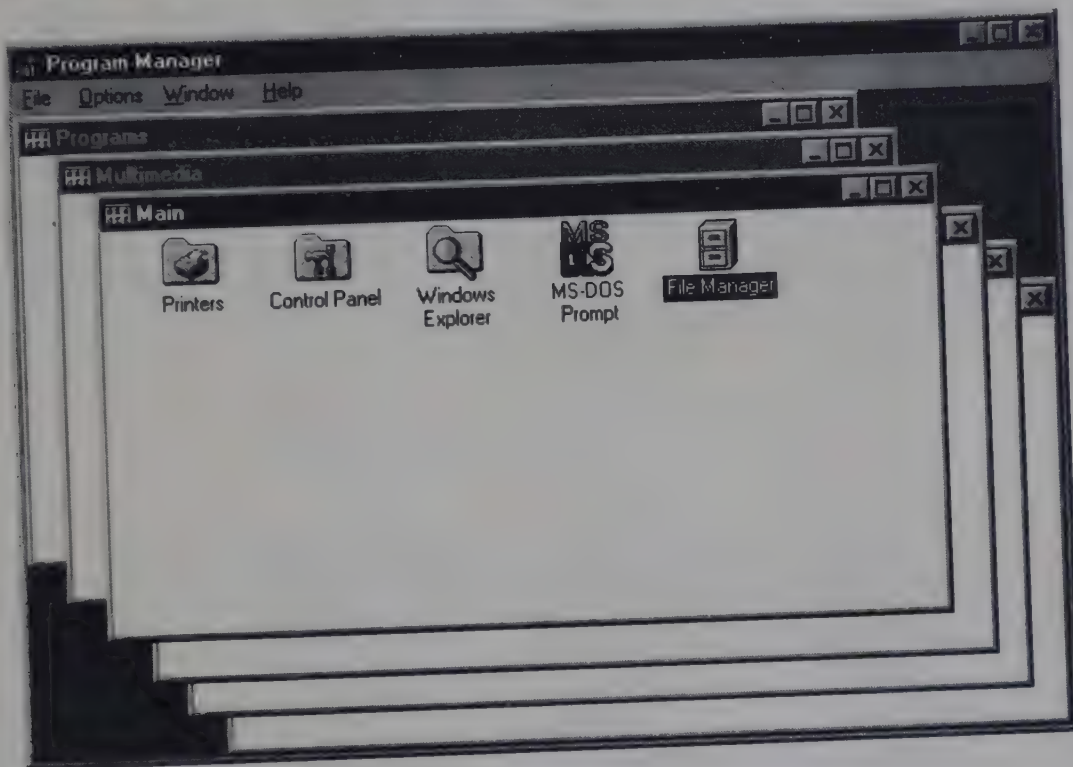


Figure 18.6 The Program Manager application.

If you are familiar with Windows 3.1, you can see that the Windows 95 version of Program Manager has a different look from that of its predecessor. All the components are there, however, and the differences are mostly in appearance. The application and group window icons assume the improved Windows 95 look and behavior. Minimized group window icons in Windows 3.1 are labeled buttons under Windows 95. These differences are cosmetic. The differences in program functionality are slight.

To understand how the Windows 95 Program Manager differs from earlier Windows versions, choose **Help Topics** on the Program Manager Help menu

and select **Differences From Previous Versions of Windows**. Figure 18.7 shows that Help topic.

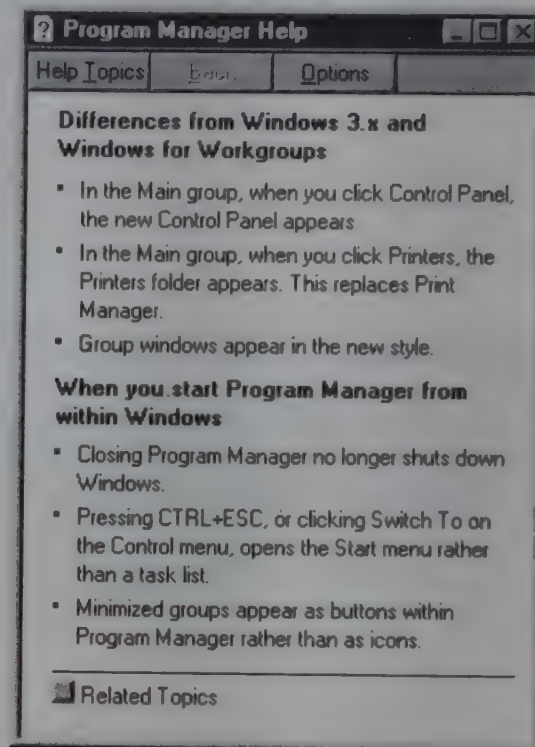


Figure 18.7 Differences in Program Managers.

FILE MANAGER

You can run File Manager as an independent application or from the Main group in Program Manager. File Manager's executable program name is **winfile.exe**, and it is found in the subdirectory where you installed Windows 95. If you are running from Program Manager's Main group, double-click the **File Manager** icon to open the File Manager application, as shown in Figure 18.8.

As with Program Manager, File Manager's look and behavior take on the appearance of Windows 95 applications, but the program's functionality is almost identical to that of the Windows 3.1 Program Manager.

To view the differences between the Windows 95 File Manager and that of previous versions, choose **Help Topics** on File Manager's Help menu and select the topic titled **Differences From Previous Versions of Windows**. Figure 18.9 shows that topic.

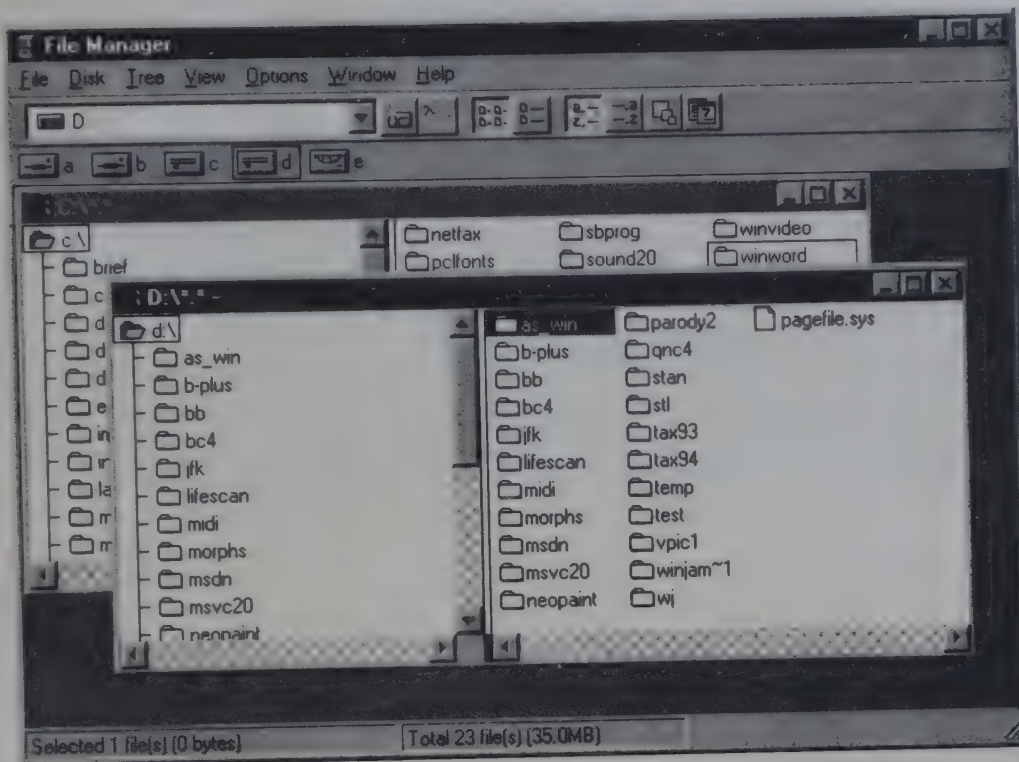


Figure 18.8 The File Manager application.

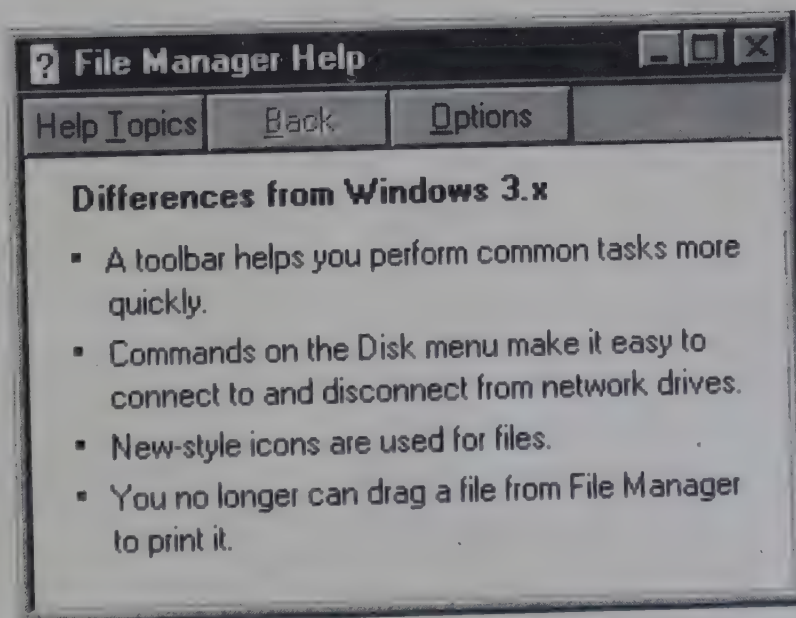


Figure 18.9 Help topic: Differences From Previous Versions of Windows.

MS-DOS

Underneath Windows 95 is a new version of MS-DOS. Following Microsoft's announcement of Windows 95 and during the beta period, there was a great deal of controversy surrounding the degree to which Windows 95 was its own independent, integrated operating system and the degree to which it relied on the underlying MS-DOS. For Windows 95 users, these debates hold little meaning. Don't let them deter you from using Windows 95 because some vague deprecation of its architecture makes it sound as if it is less than perfect. Don't worry about that stuff. MS-DOS is there for a reason, and you may or may not have occasion to use it.

In the past, I was devoted to the MS-DOS command-line interface. I used Windows because it offered superior applications for my writing—mainly word processors and E-mail. But to manage my computing environment—copy files, delete them, make subdirectories, format diskettes, make backups, keep track of everything—I used MS-DOS, sometimes by itself and other times from a Windows DOS box. MS-DOS was easier and more intuitive than using the File Manager. I worked that way for about five years, first with Windows 3.0, then 3.1, then Windows for Workgroups 3.11, and finally with Windows NT 3.5. In talking to other people, I find that my experience—at least through the Windows 3.1 period—is typical. Most so-called power users used Windows to load and run graphical applications and used MS-DOS to maintain their systems.

I've been using Windows 95 since early in the beta program when it was called Chicago, which has been long enough for me to become expert enough to write this book. I found that my forays into MS-DOS became less frequent as I learned more about how to use Windows 95. Microsoft landed a keeper with its research into the work habits and requirements of PC users. Now, there are few things that I can do better in MS-DOS. The only significant exceptions are game programs that do not run under Windows. Most of these programs, which once required a dedicated machine—and not a DOS box—run nicely in a Windows 95 DOS box.

The DOS Box

You run MS-DOS by opening a DOS box. Choose the **MS-DOS** icon on the Start/Programs menu to open a DOS box, as shown in Figure 18.10.

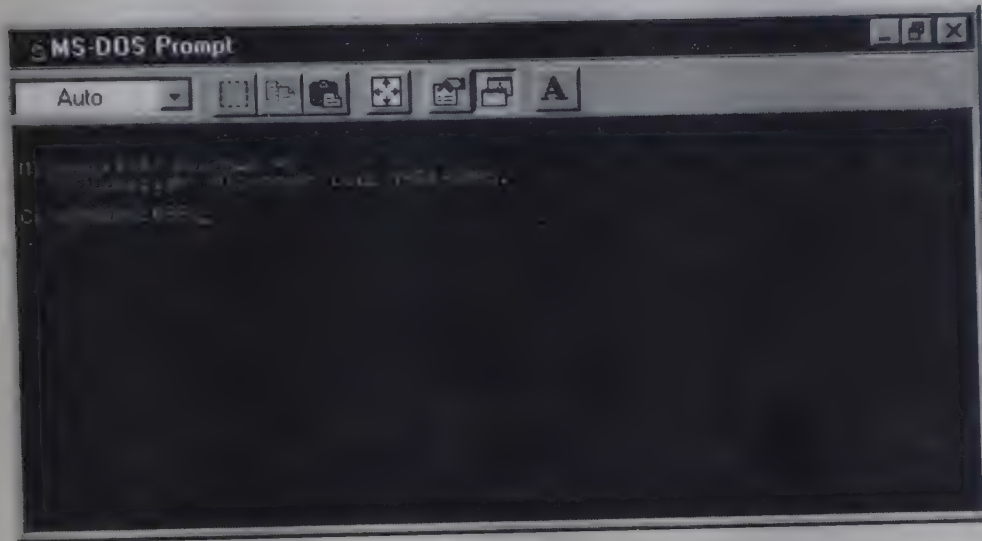


Figure 18.10 The DOS box.

If your computer lets the DOS box take over the entire screen, you can change to the windowed DOS box shown in Figure 18.10 by pressing **Alt+Enter**.

The DOS box displays the familiar MS-DOS command-line prompt. If you are not familiar with this format and how to use it, you might want to bone up on the basics of MS-DOS. In that case, I recommend my book *teach yourself... DOS 6.0*, published by MIS:Press in 1992. Now, we'll concentrate on how to use the features of the Windows 95 DOS box to configure your use of MS-DOS.

Differences from Earlier Versions

The Windows 95 DOS box differs from the DOS boxes in previous Windows versions in several respects. First, the DOS box window sports a toolbar; you'll learn about the tools on the toolbar in the next section. Second, if the MS-DOS application that you are running uses the mouse, the mouse works in the Windows 95 DOS box even when the DOS box runs in a window. In some versions of Windows, you had to run your MS-DOS applications in full-screen mode to use the mouse. Third, you can execute Windows 95 applications from the DOS box. You could not do that under Windows 3.1. Fourth, the Windows 95 DOS box includes a Properties command that lets you change the configuration of the DOS box. Finally, when you change the DOS box in any way, the change is persistent for subsequent uses of the DOS box.

Configuring the DOS Box from the Toolbar

You can change the way the DOS box appears and several of its operating characteristics by using tools on the toolbar. These changes affect only a particular instance of the DOS box. If you use many MS-DOS applications, you probably have them installed as menu selections. Each one can have its own properties. We'll discuss the configuration items for opening the MS-DOS Prompt window. Later, when you install MS-DOS applications, you can apply these procedures individually to the configuration of each one.

Fonts

The drop-down list box on the toolbar lets you choose from several font sizes for the MS-DOS text displays. As you change the size of the font, the size of the DOS box window changes to accommodate the font. Figure 18.11 shows the drop-down list box.



Figure 18.11 Font size drop-down list box.

Select a font size by clicking its entry in the drop-down list box. You can try several sizes until you find one that you like. After selecting a font size, select **Auto**. The font size automatically changes when you resize the DOS box's window.

The tool button at the right end of the toolbar has an **A** icon to indicate that it controls which font sizes are available on the drop-down list box. Click that tool button to open the **Font** page of the MS-DOS Prompt Properties dialog box, as shown in Figure 18.12.

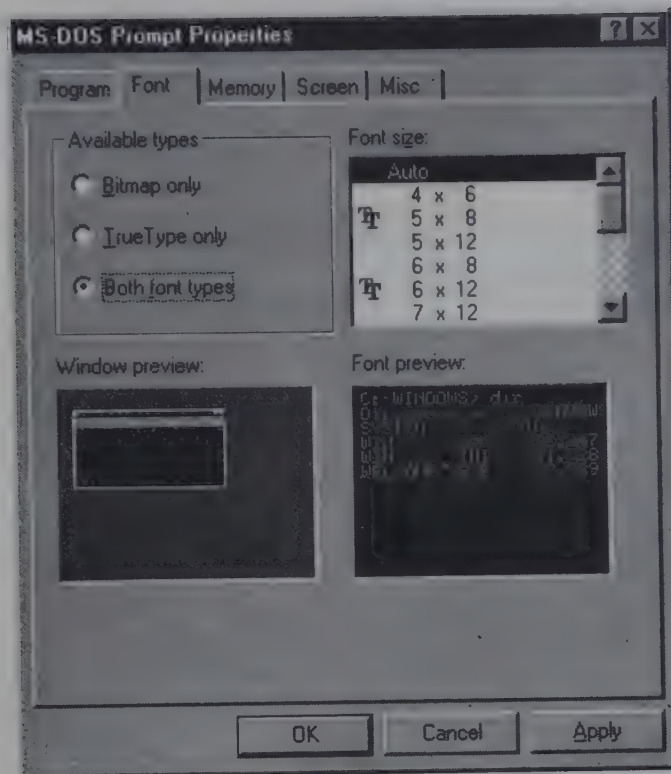


Figure 18.12 The Font page.

You can specify which types of fonts are available for the DOS box. The **Font size** list box has the same function as the toolbar drop-down list box on the DOS box window.

Full-Screen vs. Windowed Modes

The tool button with the four arrows (the one in the middle) changes the DOS box to full-screen mode, which means that the current application takes over the screen. Other applications are still running, but the DOS box controls the screen. You can return to the windowed mode by pressing **Alt+Enter**.

Some MS-DOS applications require full-screen mode. An application that displays graphics is an example.

Configuring the DOS Box Properties

The third tool button from the right end—the one with the finger icon—opens the Properties dialog box for the DOS box. You can also open this dialog box by right-clicking the DOS box title bar and choosing **Properties** from the right-click menu.

The Program Page

You have seen the **Font** page for the Properties dialog box. Figure 18.13 shows the Properties dialog box opened to its **Program** page.

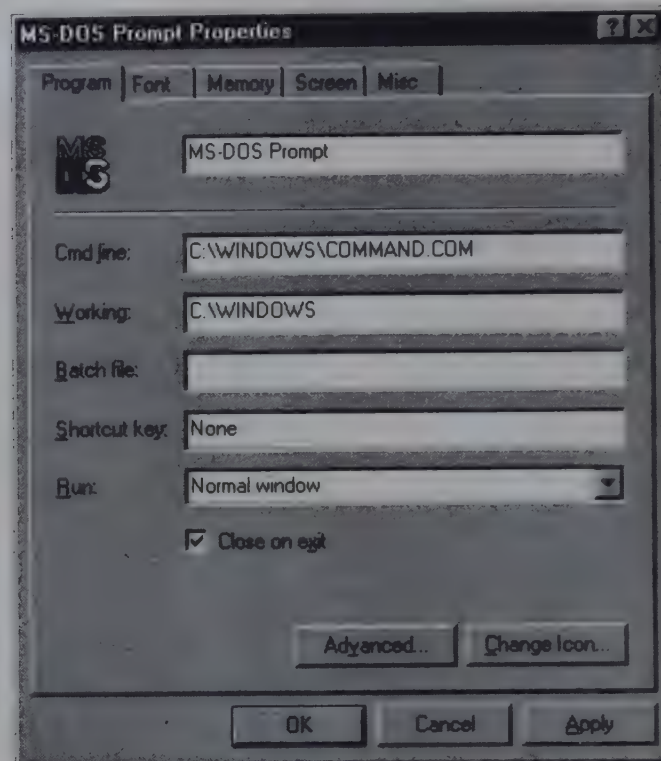


Figure 18.13 The Program page.

The first text box control field is the name of the MS-DOS application—in this case, the MS-DOS Prompt, which provides command-line access to MS-DOS. Later, when you install an MS-DOS application, you will change this name to reflect that of the application.

The **Cmd line** field is the MS-DOS command that executes the program. In this example, the command line executes the MS-DOS command line shell program named **command.com**. Later, you will insert the command line to run an MS-DOS program.

The **Working** field specifies the drive and subdirectory that should be current when the program starts unless they are the same as those from where the program is run.

The **Batch file** field names an MS-DOS batch file to be run. You should fill in this field only when the **Cmd line** field specifies **command.com**. The batch file should be an ASCII text file with valid MS-DOS commands. Refer to your MS-DOS documentation to learn about batch files.

The **Shortcut key** field specifies a key that you can use to execute the MS-DOS application from within Windows 95. It does not work with the **command.com** configuration shown here. You have to use it for applications.

The **Run** drop-down list box lets you choose between **Normal window**, **Minimized**, and **Maximized** as the configuration for the MS-DOS program when it is first started.

The **Change Icon** button opens the Change Icon dialog box shown in Figure 18.14.

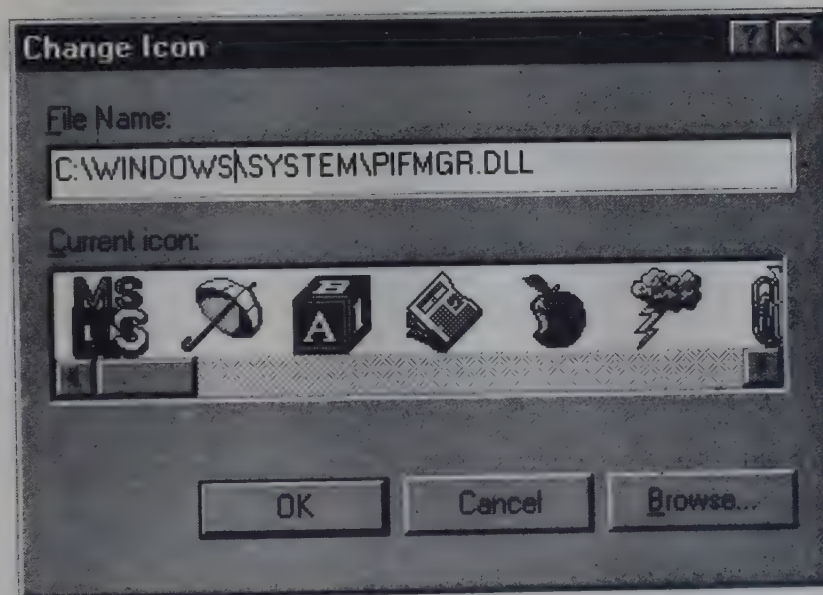


Figure 18.14 The Change Icon dialog box.

The Change Icon dialog box lets you assign a different icon to the running MS-DOS program. Its **Browse** button lets you search among many files that have icons for one you like. Icons are usually associated with Windows 95 executable files with the extensions of .EXE and .DLL. As you browse these files, you can see their icons.

The **Advanced** button on the Properties dialog box's **Program** page opens the Advanced Program Settings dialog box shown in Figure 18.15.

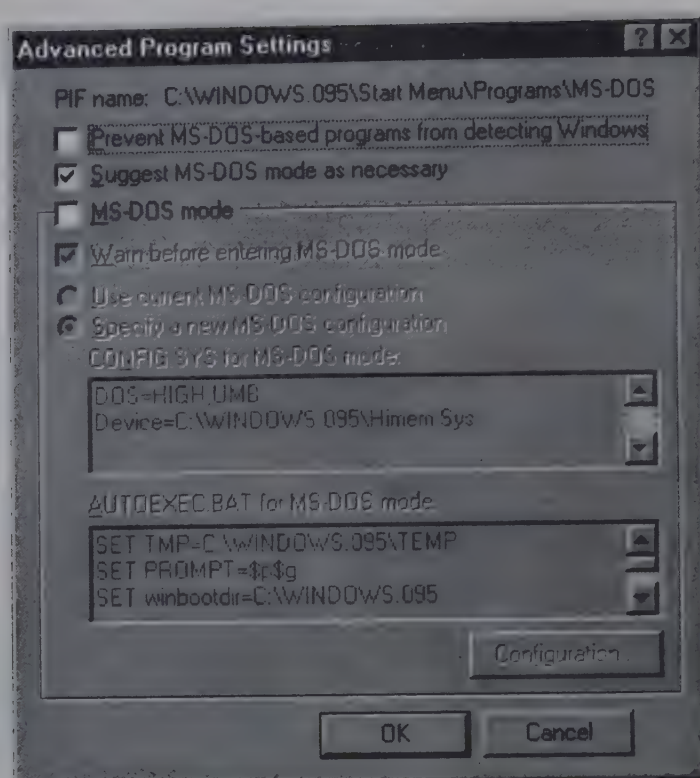


Figure 18.15 The Advanced Program Settings dialog box.

The first checkbox lets you prevent the MS-DOS application from detecting the presence of Windows. Some MS-DOS applications are designed to behave differently if Windows 3.1 is running and to expect certain behavior from the operating system in that case. Windows 95 might not adequately emulate the Windows 3.1 environment for such programs, and you should run them as if Windows were not running in tandem. The program's vendor should be able to tell you whether its software has this requirement.

The MS-DOS mode checkboxes refer to MS-DOS mode, which we'll discuss later in this chapter.

The Memory Page

Figure 18.16 is the **Memory** page in the Properties dialog box.

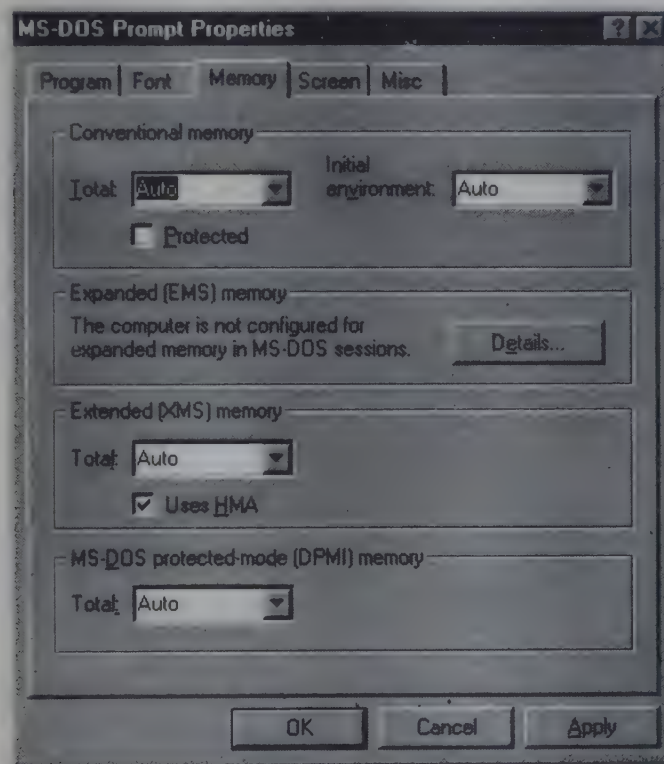


Figure 18.16 The Memory page.

The **Memory** page contains drop-down list boxes for each of the kinds of memory that the program can use. The list boxes have values. Usually, the **Auto** value for each of these properties suffices. If an MS-DOS application has unusual memory requirements, its documentation should specify them.

In Figure 18.16, notice that the dialog box reports that no EMS (Expanded Memory Specification) memory is available. Some MS-DOS applications require expanded memory. You might have to modify your initial boot sequence. Click the **Details** button for instructions.

The Screen Page

Figure 18.17 is the Properties dialog box's **Screen** page.

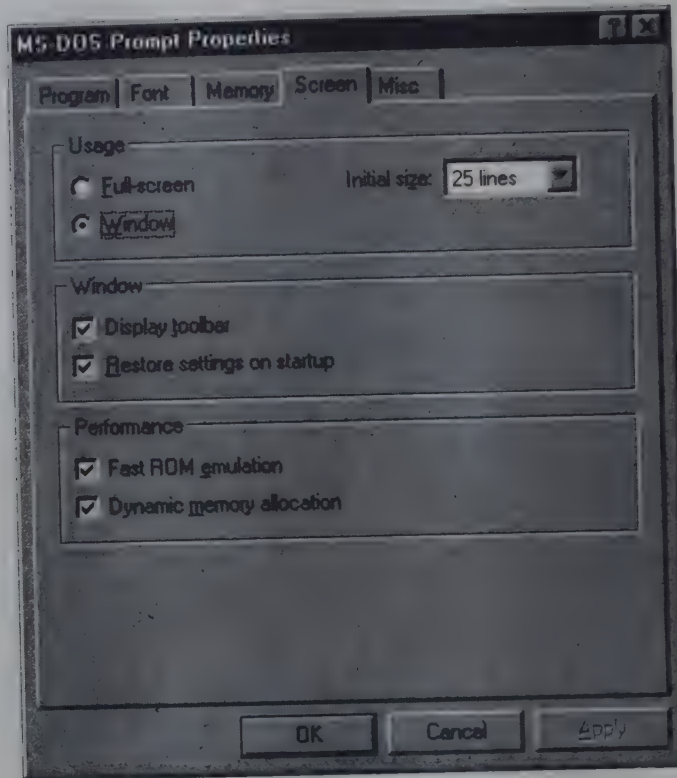


Figure 18.17 The Screen page.

Use the **Screen** page to specify how to configure the screen when you start the program. Remember that some MS-DOS applications require full-screen mode. Select that option here. The screen size can be specified as having 25, 43, or 50 lines. The toolbar of the DOS box window can be suppressed. When you select **Restore settings on startup**, any changes that you make to the DOS box's window configuration persist for subsequent uses of the same DOS box. **Fast ROM emulation** makes the program run faster, but if the program has odd display problems, uncheck this checkbox. Leave **Dynamic memory allocation** checked. It makes more memory available to the rest of the system while your MS-DOS application runs.

The Misc Page

Figure 18.18 shows the Properties dialog box's **Misc** page.

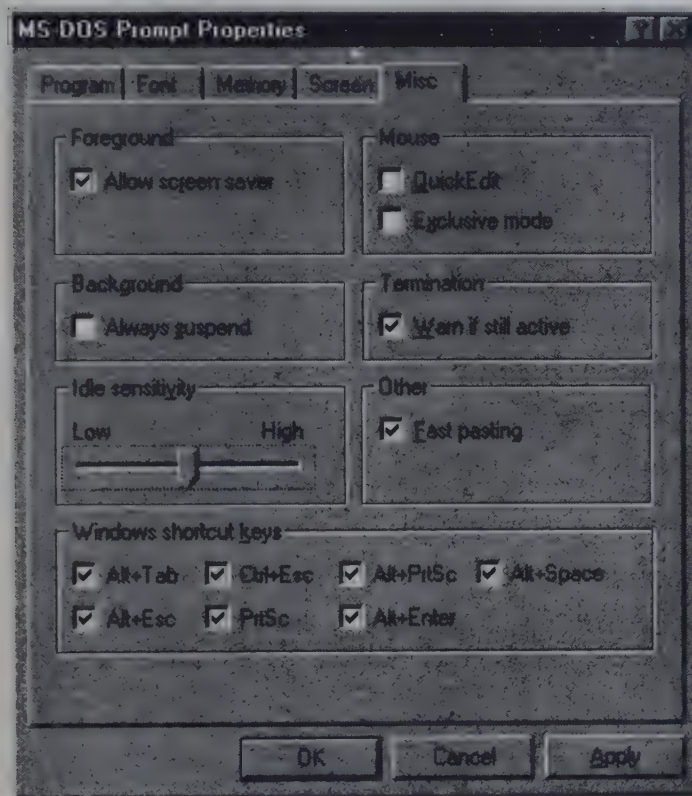


Figure 18.18 The Misc page.

MS-DOS applications run in the foreground when they have the focus and in the background when another window has the focus. In this dialog box, you can disable screen savers when they are in the foreground. You can tell Windows 95 to always suspend the MS-DOS application when it is in the background. The **Idle sensitivity** slider control sets the length of time that an MS-DOS application can remain idle waiting for keyboard or mouse interaction before relinquishing the CPU to other applications. The **QuickEdit** mouse control dedicates the mouse to marking blocks for cut and copy clipboard operations. The **Exclusive mode** mouse control keeps the mouse in the application as long as the application has the focus.

Running a Windows Application from the DOS Box

When a DOS box is displaying the MS-DOS command-line prompt, you can run a Windows application by typing the name of its executable file on the command line.

Exiting from a DOS Box

The **Program** page has a **Close on exit** checkbox. When this control is checked, the DOS box window closes when the application terminates. When this control is not checked, the DOS box window remains open. In this case, you can exit from the DOS box by typing **exit** at the MS-DOS command-line prompt and pressing **Enter**. You can also close the DOS box window by clicking its **Close** button or choosing the **Close** command from the window's System menu.

MS-DOS Applications

For this exercise, we install a typical MS-DOS application as an icon on the desktop's Programs menu. Every copy of MS-DOS includes a program named **edit.com**, a text editor that runs in MS-DOS text mode. We'll install that program.

Do the following procedure with no other programs running, particularly ones that have unsaved data that you value. That way if your system crashes, you won't lose important data.

From the Start menu, choose **Settings**. Click **Taskbar** to open the Taskbar Properties dialog box. Click the **Start Menu Programs** tab to change to that page, as shown in Figure 18.19.

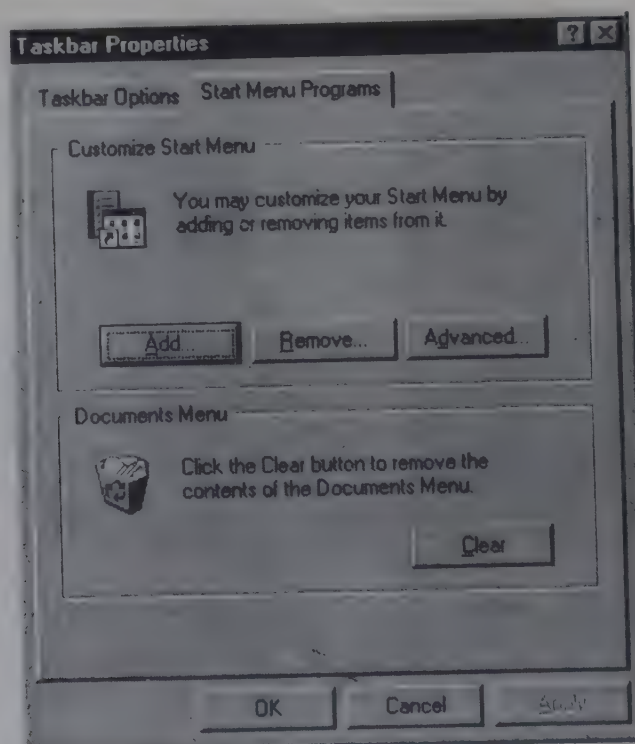


Figure 18.19 The Start Menu Programs page.

Click **Advanced** to open Explorer to the Start menu, as shown in Figure 18.20.

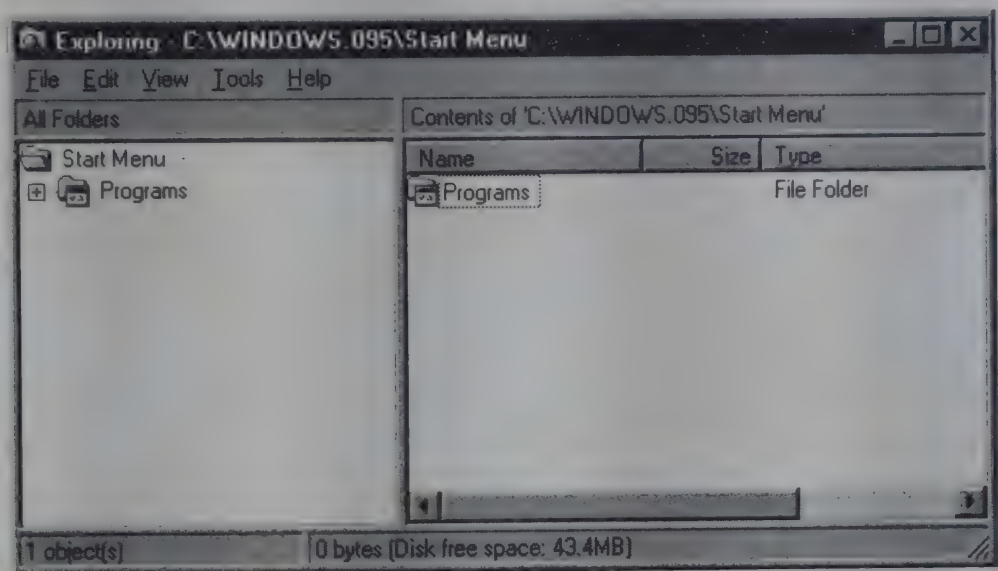


Figure 18.20 Exploring the Start menu.

Select the **Programs** icon. The **Contents** pane fills with the contents of the Programs menu. Right-click the **Contents** pane and choose **New** on the right-click menu. Click **Shortcut** in the New cascaded menu to open the Create Shortcut dialog box shown in Figure 18.21.

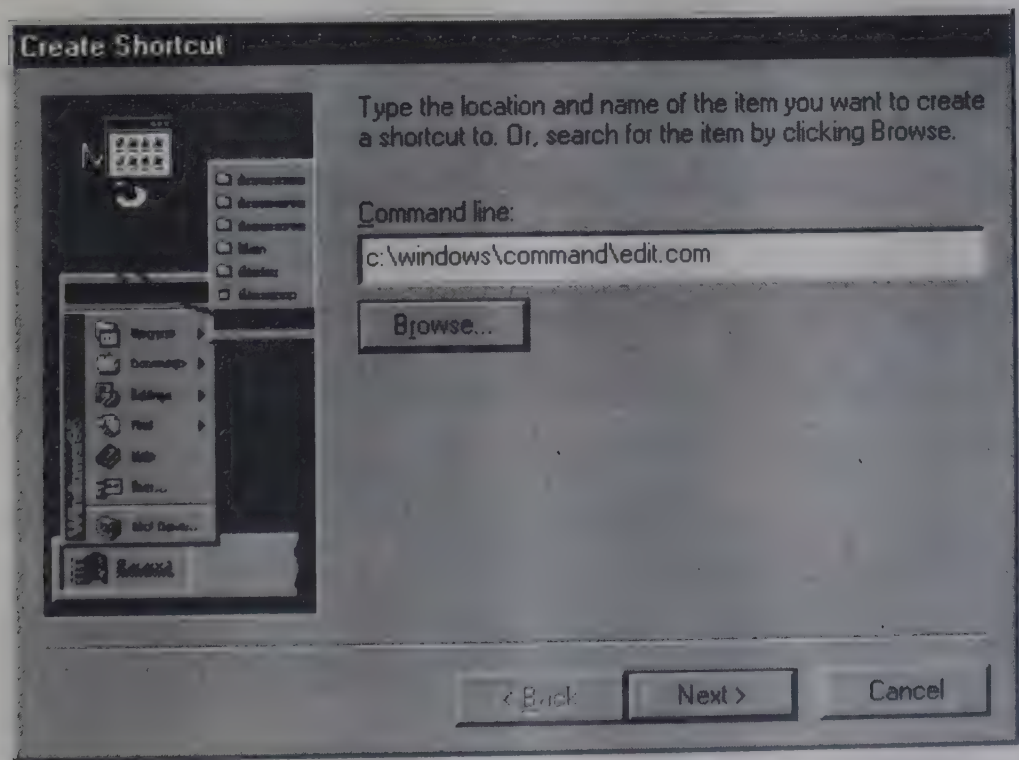


Figure 18.21 The Create Shortcut dialog box.

Type the path to the Edit program's executable file. In Figure 18.21, I typed `c:\windows\command\edit.com`. If you installed Windows 95 somewhere other than `c:\windows`, substitute the correct drive and directory. The `\command` subdirectory and the program's executable file name should be as the figure shows. Click **Next** to open the Select a Title dialog box shown in Figure 18.22.

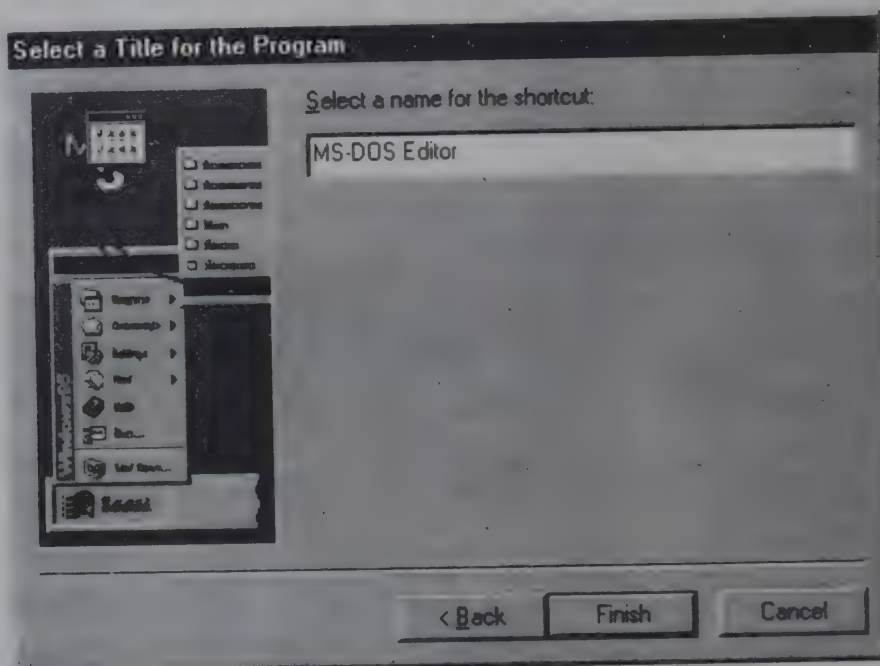


Figure 18.22 Select a Title dialog box.

The system automatically assigns an acceptable name, as Figure 18.22 shows. Click **Finish**. The Explorer window changes to show the newly installed **MS-DOS Editor** shortcut in the Startup menu. Close the Explorer window.

The next time you open the Start/Programs menu, the **MS-DOS Editor** icon will be there.

Exchanging Text Data between MS-DOS and Windows Applications

Windows 95 supports the exchange of text data between Windows applications and MS-DOS applications through the Windows 95 clipboard.

Open the **MS-DOS Editor** from the Start/Programs menu. Open the **Notepad** from the Accessories menu. Type some text into the MS-DOS Editor. Figure 18.23 shows this configuration.

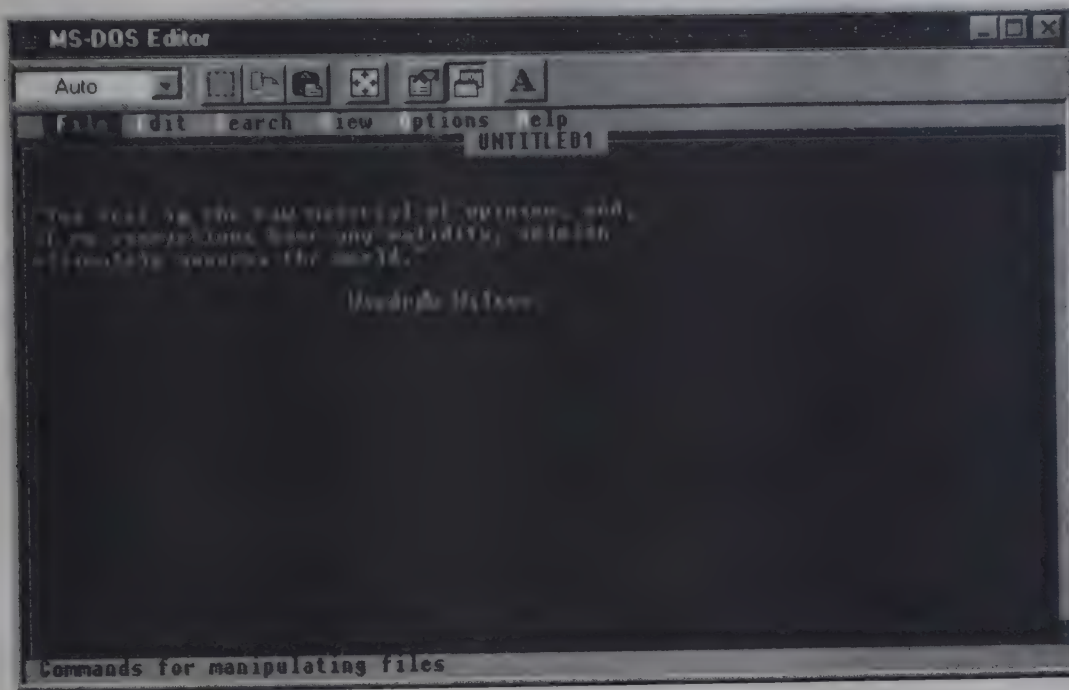


Figure 18.23 The MS-DOS Editor with text.

Click the **Mark** button on the MS-DOS box toolbar. The **Mark** button is the one with a dotted line square; it is the leftmost button on the toolbar. With that button clicked, move the mouse pointer into the text, press and hold the left mouse button, and drag the mouse to describe a rectangle that encloses the text. Figure 18.24 shows the text selected that way.

With the text marked, click the **Copy** tool button, which is just to the right of the **Mark** tool button. The **Mark** button pops out, and the text marking goes away. Now switch to the Notepad application. Choose the **Paste** command on the Edit menu. Figure 18.25 shows that the text you marked and copied from the MS-DOS application is pasted into the Notepad application's document.

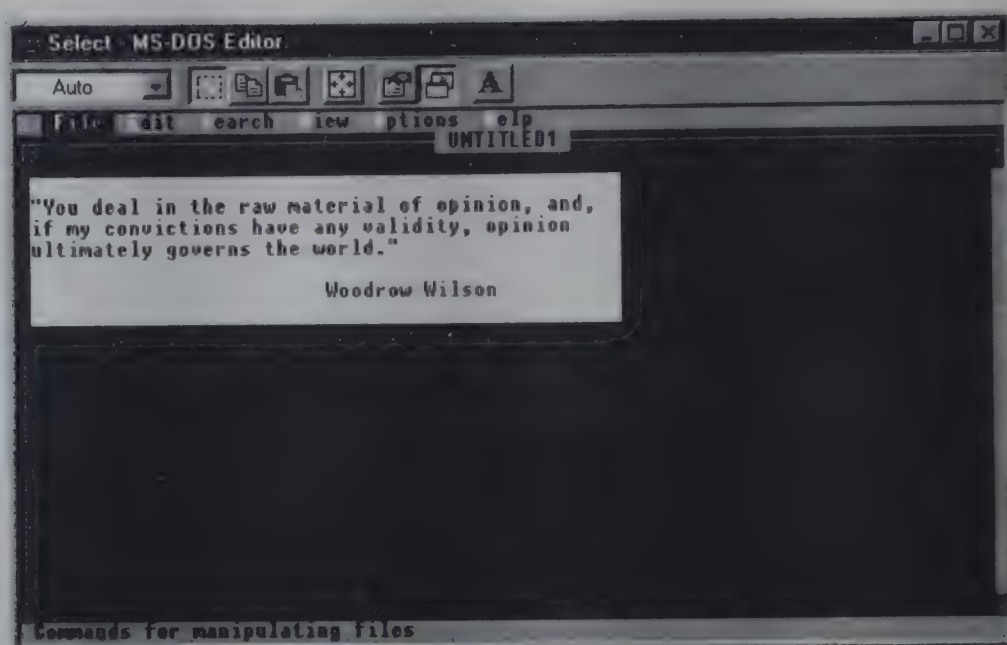


Figure 18.24 Text marked in an MS-DOS application.

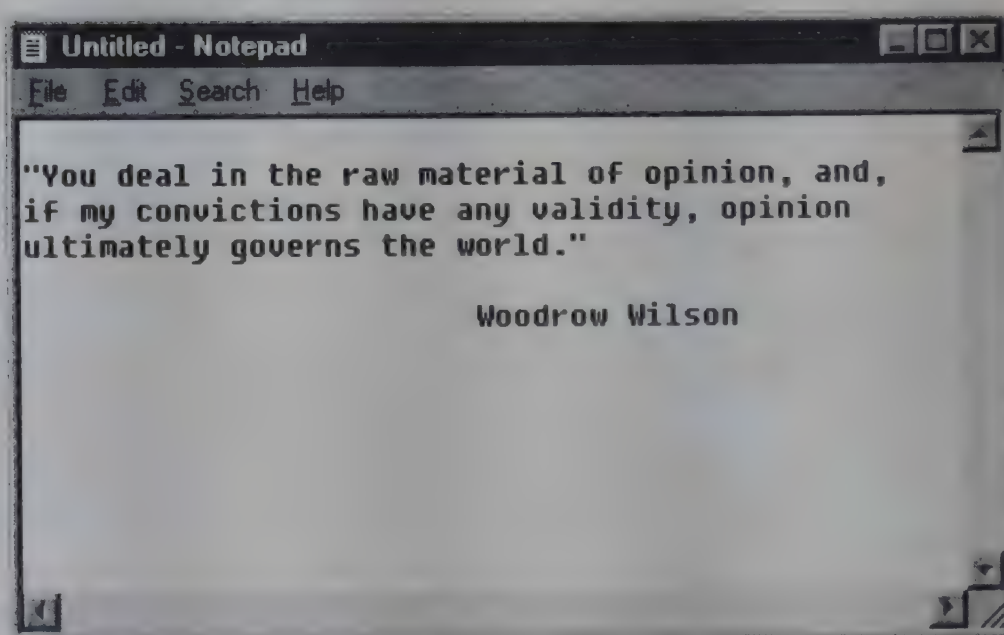


Figure 18.25 Text pasted from an MS-DOS application.

Now type some more text into the Notepad. Select the text and choose **Copy** on the Edit menu to copy the selected text into the clipboard. Figure 18.26 shows the Notepad with additional text entered and selected.

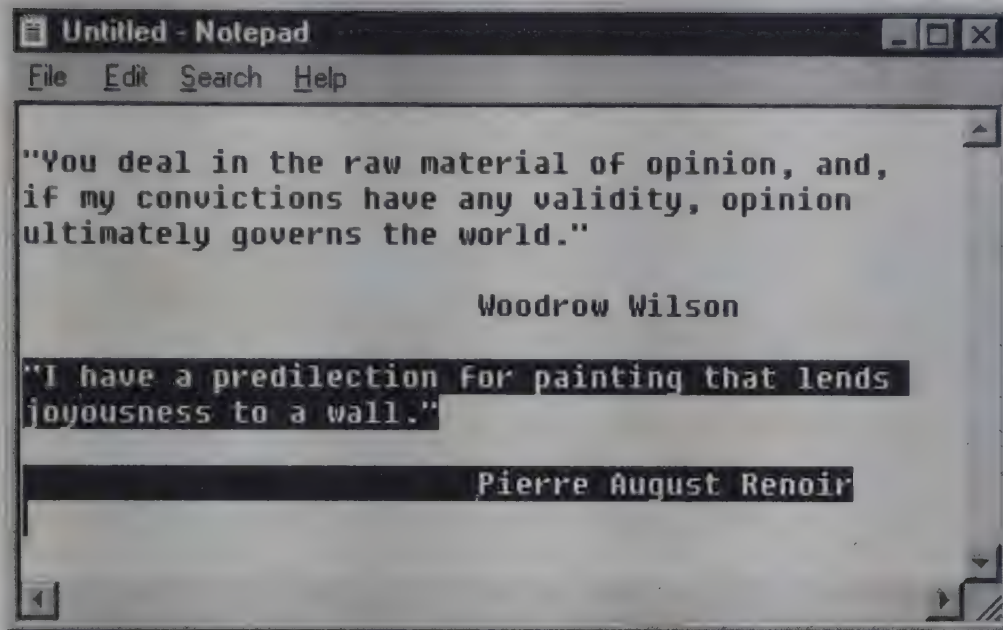


Figure 18.26 Text selected in Notepad.

Switch to the MS-DOS Editor, position the keyboard insertion cursor at the end of the document, and click the **Paste** tool button, which is the third button from the left; it has a clipboard icon. Figure 18.27 shows the text from the Notepad application pasted into the MS-DOS application.

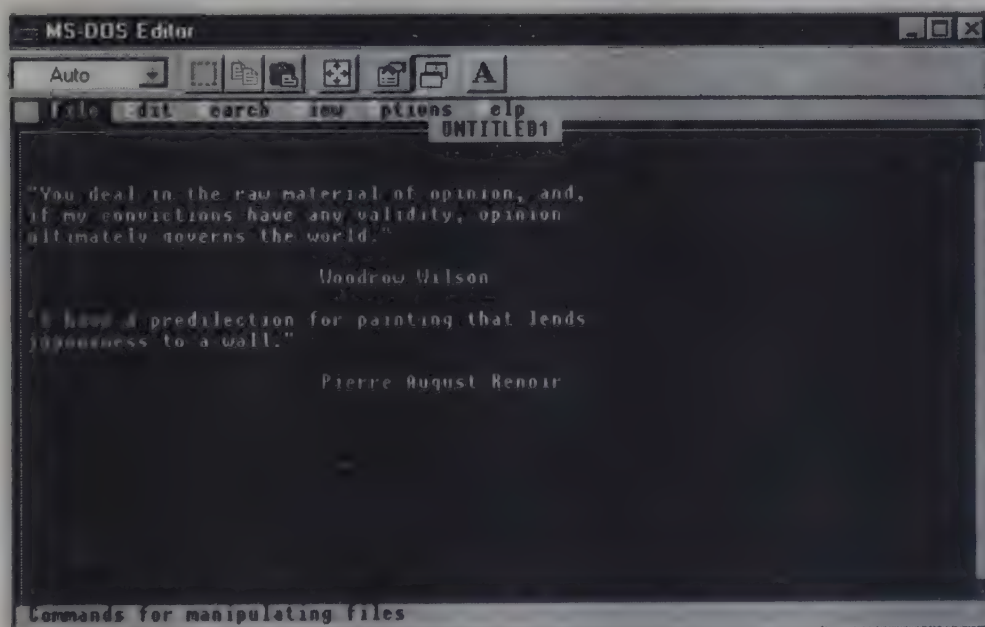


Figure 18.27 Text pasted into an MS-DOS application.

MS-DOS Mode

Windows 95 supports a mode of operation called MS-DOS mode. This mode has nothing to do with DOS boxes. In this mode, there is no graphical user interface. There is only the MS-DOS command line, truly a legacy environment.

There are four ways to get into MS-DOS mode. Refer to the Startup menu shown in Figure 2.9 in Chapter 2. If you select **Command prompt only** from that menu, the system boots in MS-DOS mode. The second way to enter MS-DOS mode is to boot from the emergency Startup Disk that you built during installation of Windows 95. The Startup Disk runs only in MS-DOS mode.

The third way to run MS-DOS mode is to assign an MS-DOS application the MS-DOS mode property. Recall the Advanced Program Settings dialog box that appears during the configuration of an MS-DOS application. Figure 18.28 shows that dialog box with **MS-DOS mode** selected for the MS-DOS application being installed.

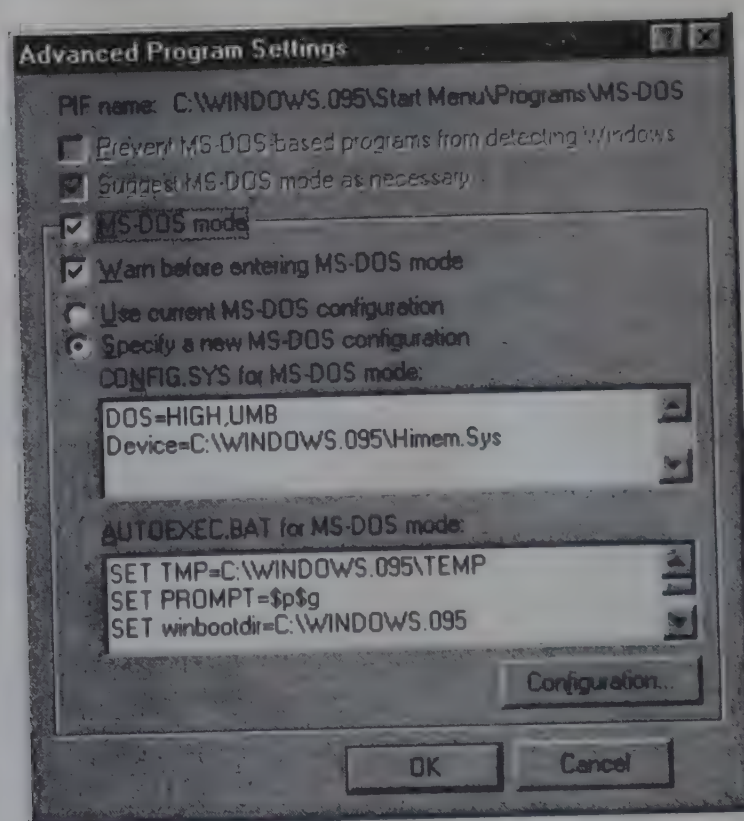


Figure 18.28 Advanced Program Settings with MS-DOS mode selected.

You can customize the **config.sys** and **autoexec.bat** configuration files for the MS-DOS mode session by clicking the lower radio button and entering text directly into the two editboxes in the dialog box. Doing this requires advanced

understanding of how MS-DOS works. Proceed with caution. It is better to use the **Configuration** button.

The **Configuration** button opens the MS-DOS Configuration Options dialog box shown in Figure 18.29.

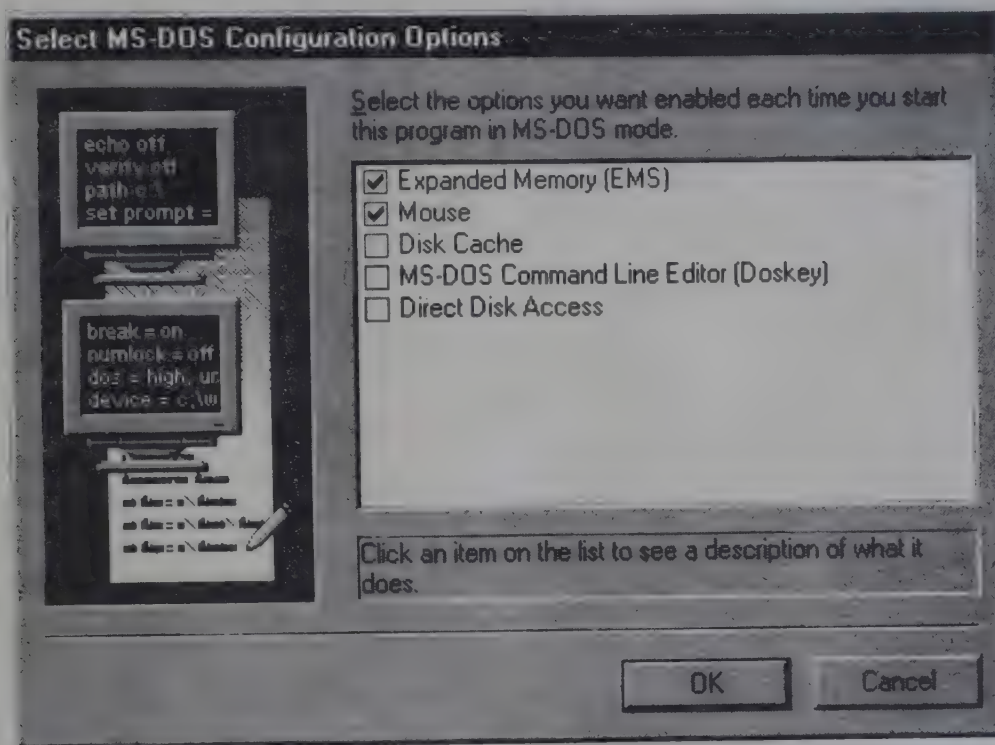


Figure 18.29 MS-DOS Configuration Options.

Select the items that you want to be included in the MS-DOS mode session. When you press **OK**, the items you select are entered into the MS-DOS mode configuration files. These setting will take effect as soon as you enter MS-DOS mode.

The fourth way to run MS-DOS mode is to choose the **Shut Down** command from the Start menu, select the radio button labeled, **Restart the computer in MS-DOS mode**, and choose the **Yes** command button.



CHAPTER-18

The Windows 95 Registry

This chapter tells you a little about the Windows 95 Registry, a mysterious no-man's land that controls the workings of the Windows 95 interface. If you're new to Windows 95, you may not have heard about the Registry; if you've ever talked to anyone in Microsoft technical support, you've heard that the Registry is off-limits and should not be modified under any circumstance. In this chapter, you will learn about:

- What the Registry is—and isn't
- How to display the Registry Editor Window
- Editing Registry items
- Restoring the Registry

WHAT IS THE REGISTRY?

If you were a Windows 3.1 user before you upgraded to Windows 95, you may have been familiar with the INI files that were integral to the operation of the system. INI files were—and are—initialization files that contain important information to tell the operating system and applications how to work together and work with your system's hardware.

Windows 3.1 included important INI files. You may remember (and may have edited) **WIN.INI** or **SYSTEM.INI**. There were others as well, along with those unique to the different application programs you used with that version of Windows. When Windows loaded (whether you started the program from the DOS prompt or it loaded automatically from an added line in your **AUTOEXEC.BAT** file), it read the necessary information from the INI files and then did its stuff.

Does the Registry replace **AUTOEXEC.BAT** and **CONFIG.SYS**, those frightening DOS startup files everyone told you not to mess with? In a small sense, yes—but the Registry is also much more. Add in much of the information from the INI files (Windows 95 still uses INI files but fewer of them and with less potent information) and then wrap it up in the set of specifications that control all the basics of the user interface.

If you've ever had trouble getting a new program or a new peripheral—such as a printer or modem—to work with Windows 3.1, it's a relief when Windows 95 automatically senses the type of computer setup you have. That information is gathered by the Registration Wizard, which writes all the hardware information in the Registry.

But don't get the idea that the Registry is static; it's not. Each time you install or uninstall a program, the Registry is changed. Each time you add a piece of hardware or remove it from your system, the Registry gets changed.

WHAT MICROSOFT SAYS ABOUT THE REGISTRY

Most of us are glad to give Windows 95 the power to come to its own conclusions about our hardware. We don't mind using Install and Uninstall to add and remove programs. The installation of hardware is easier than ever—we just use the **Add/Remove Hardware** feature in the Control Panel, and Windows 95 does the rest. So much of Windows 95 seems customizable; after all, you can choose the looks, sounds, and actions along with a variety of icons and pointers—how much creative license do we really need?

But the more technically minded people in the crowd are curious about this new system of managing integral system data, both for hardware and software. They've tapped into the Registry and have begun exploring ways to change the interface on their own systems. They've begun to discover a flexibility in this system designed for users who want the quick version.

What does Microsoft say about altering the Registry? One word: "Don't." What happens when your system locks repeatedly? Reinstall. Does Microsoft Exchange keep hanging you out on the phone line to dry? Reinstall. Getting weird results when you try a new program? Reinstall. Here's what it says in "Overview of Registry Editor," quoting from the Registry Editor's Help topics: "You should not edit your registry unless it is absolutely necessary. If there is an error in your registry, your computer may become nonfunctional. If this happens, you can restore the registry to its state when you last successfully started your computer."

No, the Registry is not sacred. But it's also not for the technically timid. If you are happy with the way things look and work on your system and are satisfied with the level of control you have, you don't need to bother with the Registry. But if you want more Windows 95 involvement and are ready for some cautious investigation into the workings of the operating system, you can open the Registry and take a look around.

If you're interested in how the Registry works, or if you absolutely need to change Registry information, you should take a look at *The Windows 95 Registry* by John Woram, published by MIS:Press.

WHAT THE REGISTRY ISN'T

When you open the Registry window for the first time, you'll quickly see that it is not **WIN.INI**—not a readable text listing of the various parameters used to keep your system and programs running properly. **WIN.INI** was easy to edit and easy to fix. You just had to know the place you were looking for, make your changes, and save the file.

The Registry, on the other hand, looks more like Explorer than Notepad. It appears in a two-panel window called the Registry Editor, and it contains keys instead of folders.

Another thing the Registry isn't: a single file. The Registry comprises two files. The one that contains the information about your computer system is called **SYSTEM.DAT**. The other file, **USER.DAT**, stores default user settings,

such as the preferences you have chosen, any user profiles you have created, and application-specific settings.

BACKING UP THE REGISTRY

Whether or not you plan to edit the Registry, it includes such important files that you should make backups of the files whenever you make any significant change, hardware or software. Copy the **SYSTEM.DAT** and **USER.DAT** files to a recovery disk just in case. You can back up the entire Registry in one file by exiting Windows and entering the following command at the DOS prompt, substituting a file name of your choosing in place of filename.

```
REGEDIT/E filename.REG
```

GETTING INTO THE REGISTRY

How do you get into the Registry? There are two methods, both of them simple.

Begin by clicking the **Start** button; then click **Run**. In the Run dialog box, type **REGEDIT** (see Figure 19.1). Press **Enter**.



Figure 19.1 Accessing the Registry.

If you are working with Windows Explorer, go to the WINDOWS folder and click it. In the right pane of the Explorer window, scroll down until you see Regedit (see Figure 19.2). Double-click the **Regedit** icon.

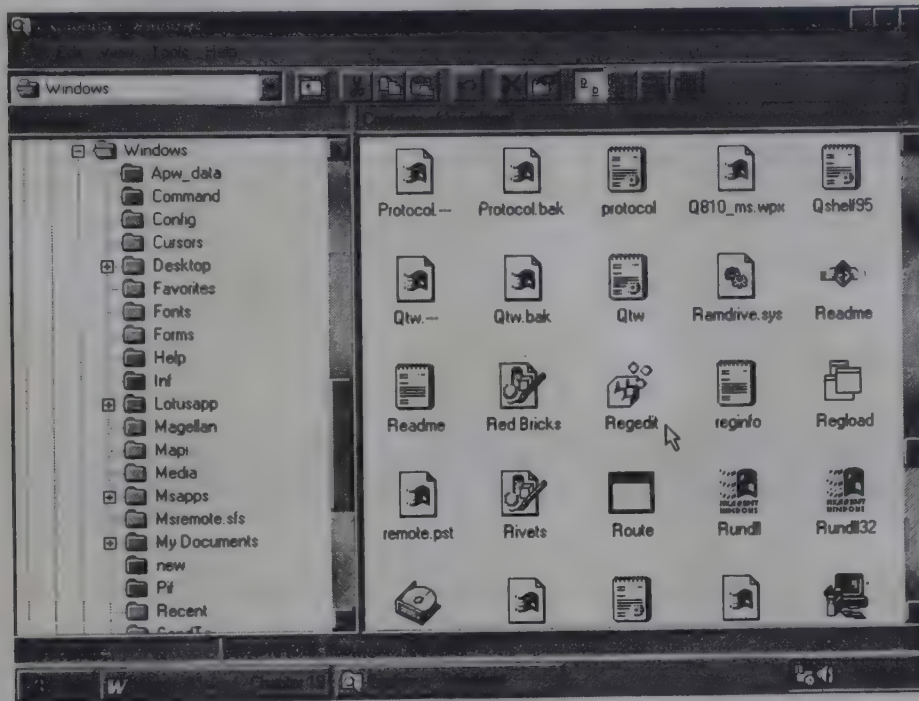


Figure 19.2 Using Windows Explorer to get to the Registry.

THE REGISTRY EDITOR WINDOW

The Registry Editor window doesn't look dangerous; it's a simple Explorer-like window divided into two panels (see Figure 19.3). At the top of the window you see the familiar title bar and window controls. Beneath that are the menu names in the menu bar. The Registry Editor includes four menus:

- Registry
- Edit
- View
- Help

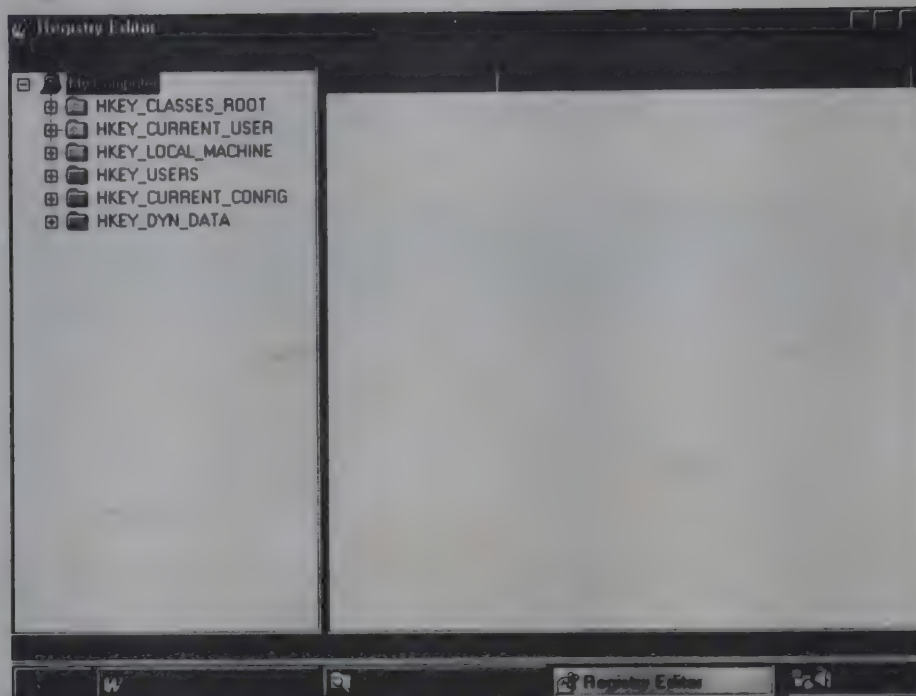


Figure 19.3 The Registry Editor window.

The Registry menu includes commands that enable you to import and export registration files, print files, or exit the Registry. The Edit menu lets you create new keys and other special items or find specific strings. The View menu gives you the option of changing the way the window is displayed; you can modify the way the window is split, refresh the screen, or display or hide the status bar. Finally, Help contains the expected **Help Topics** command along with About Registry Editor.

There are six entries in the left side of the Registry Editor window. The entries are called *keys*. Each key contains information related to a different part of your system processes.

Hkey_Classes_Root (HKCR)	Stores information that links file associations so that you can open and work with documents in their sponsoring applications by selecting the file name.
Hkey_Current_User (HKCU)	Records information stored in the USER.DAT file.
Hkey_Local_Machine (HKLM)	Records information stored in SYSTEM.DAT .
Hkey_Users (HKU)	Stores default user key information and keeps a record of User Profile settings.
HkeyCurrent_Config (HKCC)	Records backup information for SYSTEM.DAT .
Hkey_Dyn_Data (HKDD)	Stores system information gathered in the current work session.

You cannot create new keys—these six are the only ones the Registry will allow. You can display subkeys by expanding the keys in the left pane of the window. Do this by clicking the plus (+) to the left of the key you want to expand (see Figure 19.4).

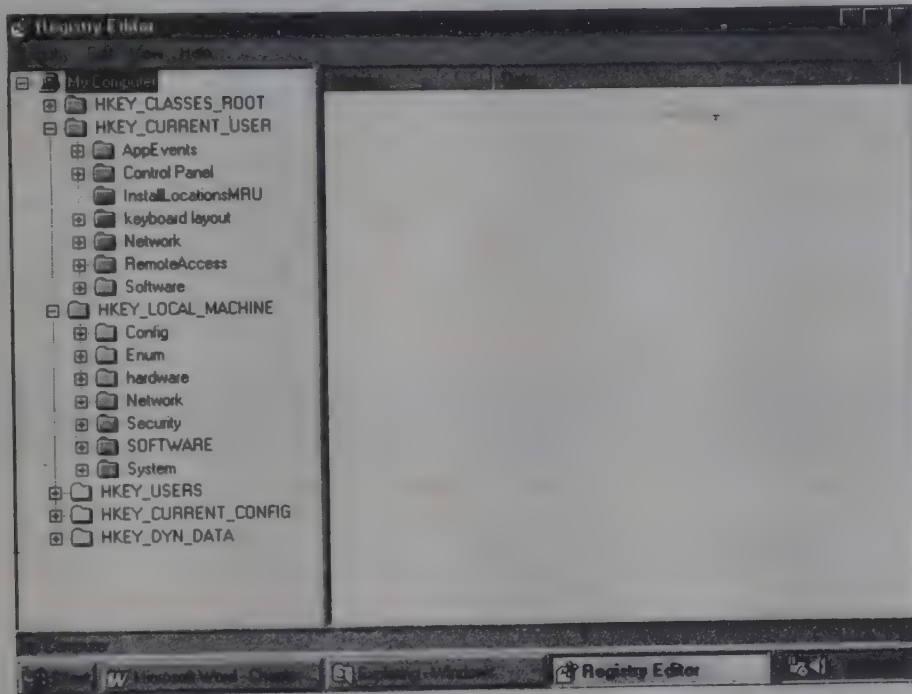


Figure 19.4 Expanding keys in the Registry.

You can continue to expand the various levels of subkeys as needed. When you get to the file level of the Registry for the key, subkey, and item you seek, you see an item name and the data in binary (see Figure 19.5). The example in Figure 19.5 shows the default style settings for Internet Explorer. Here you can see the name of the style sheet in use along with the chosen name of the default fixed font and proportional font.

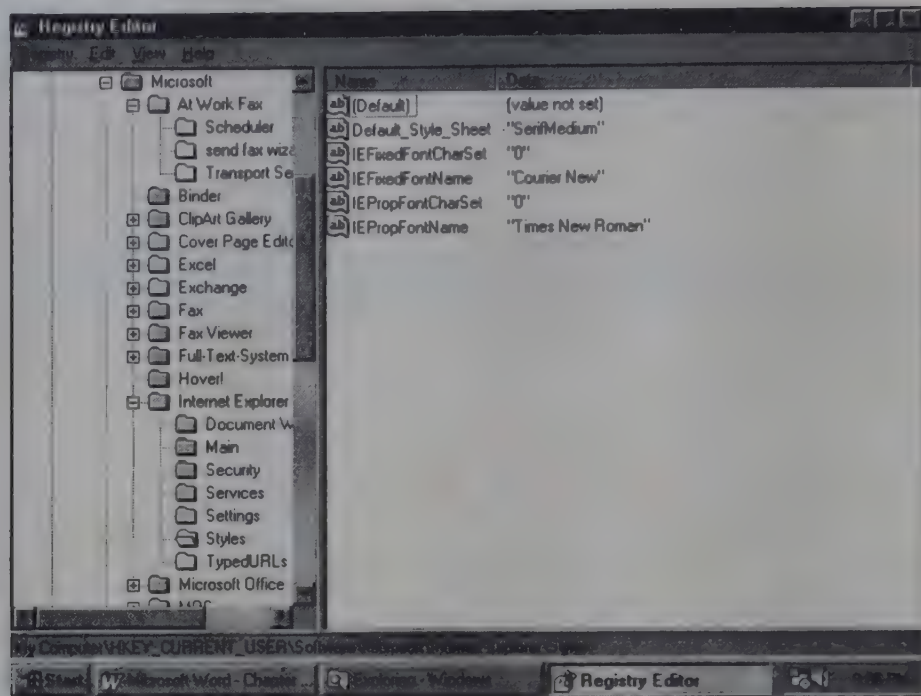


Figure 19.5 Moving through subkeys to the item you seek.

EDITING THE REGISTRY

Once you have navigated to the item you want to edit, you can edit it several different ways. The Edit menu contains commands for editing the items in the Registry. Depending on the type of item you are working with, you may want to add data strings or binary strings; you can delete items, modify items, or find specific values or strings. You can also rename items by using the **Rename** option in the Edit menu.

Suppose, in the Internet Explorer example, that you want to change the proportional font from Times New Roman to Helvetica. You can double-click the item name (in this case, **IEPropFontName**). The Edit String dialog box appears so that you can edit the value (see Figure 19.6). The value is already highlighted in the Value Data box, so you simply type the new value you want to use. When you click **OK**, the item reflects the change in the right side of the Registry Editor window.

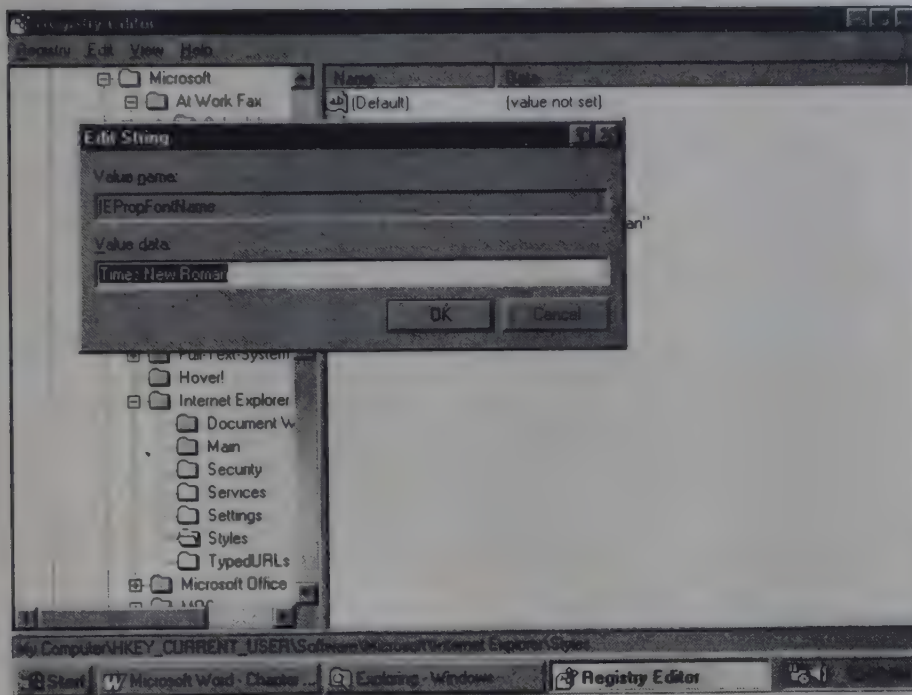


Figure 19.6 Editing the value of an item.

PRINTING THE REGISTRY

If you keep a folder containing printouts of important files—and that's not a bad idea—you may want to take a few minutes and print the Registry or a portion of it you are planning to modify or have modified. In fact, for safety's sake, it's a good idea to print a copy of a subkey before and after you modify it. That way, you can easily restore the settings if you're not happy with the change. If you want to print a selected subkey, click that subkey first; then open the File menu and choose **Print**. The Print dialog box appears, as shown in Figure 19.7. You then choose whether you want to print the selected branch or all of the Registry. Click **OK** to begin printing.

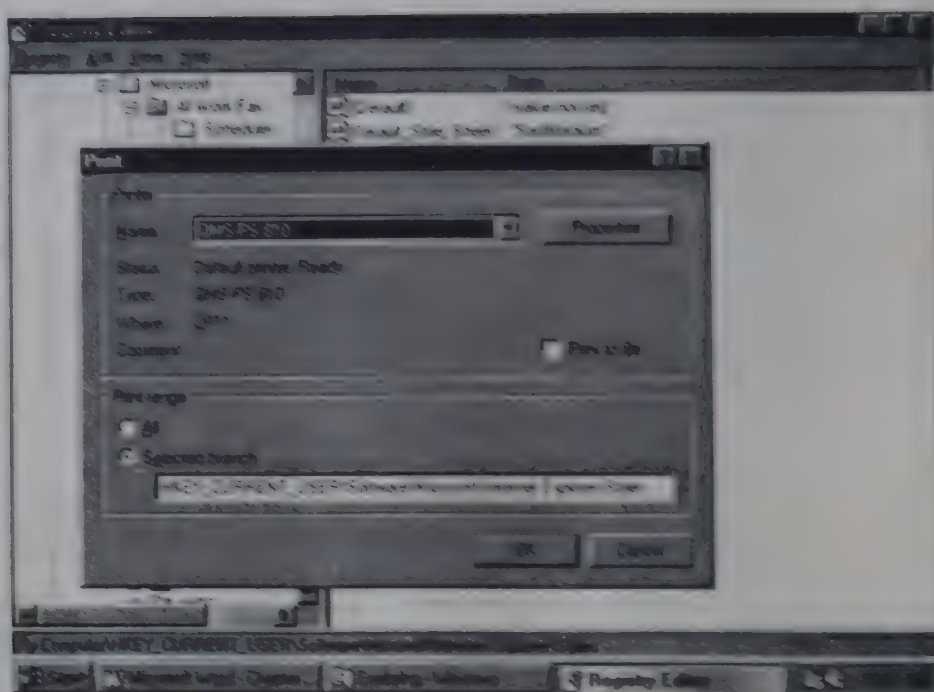


Figure 19.7 You can print all or part of the Registry.

EXITING THE REGISTRY

When you are ready to close the Registry Editor window, either click the close box or open the Registry menu and choose **Exit**.

RESTORING THE REGISTRY

Knowing that users who venture into the realm of the Registry may wind up damaging an item that causes computer problems, the Registry Editor's Help utility explains how to return the Registry to its former settings and get things started again. Because you won't be able to access Registry Help if you are unable to get into Windows 95, we cover the basics of the process here.

Start your computer in MS-DOS mode. If your desktop is functioning, click **Start, Shut Down**, and then click **Restart in MS-DOS Mode**; click **Yes**. Next, use the **CD** command to change to the Windows directory. Now follow these steps:

1. Type **attrib -s -h -r *.dat** and press **Enter**.
2. Type **erase SYSTEM.DAT** and press **Enter**.
3. Type **erase USER.DAT** and press **Enter**.

4. Type `copy SYSTEM.DA0 SYSTEM.DAT` and press Enter.
5. Type `copy USER.DA0 USER.DAT` and press Enter.
6. Type `attrib +s +h +r SYSTEM.DA2` and press Enter.
7. Type `attrib +s +h +r USER.DA2` and press Enter.

Restart your computer. The Registry will be returned to the way it was before the last modification.



APPENDIX A

Microsoft Plus!

Not long after the release of Windows 95, Microsoft came out with Microsoft Plus!, a set of add-on utilities that can help extend the capabilities of your Windows 95 system. The only requirements are that you have at least a 486 system with a CD-ROM or 3.5-inch disk drive and 8MB of RAM. You can purchase Microsoft Plus! for \$49.95 from most retail computer stores and mail order houses.

AN OVERVIEW OF MICROSOFT PLUS!

Microsoft Plus! includes several different utilities, each designed to help you accomplish a different task:

- You can use the System Agent to schedule disk scanning utilities.
- You can make more room on your hard disk by using Disk Compression.
- The Compression Agent compacts files for you automatically.

- You can choose a different look for your desktop.
- If you set up Dial-Up Networking Server, you can dial into your computer from a remote location.
- The Internet Tools and Internet Explorer can be used for Internet access.
- You can take a break with 3D Pinball.

INSTALLING MICROSOFT PLUS!

Place the Plus! CD-ROM in the CD-ROM drive. Or, if you are installing from disk, place the first disk in the disk drive. Choose **Start**, **Settings**, and **Control Panel**. Double-click **Add/Remove Programs**. Click **Install**. The next screen searches for an install utility, first on the floppy disk drive and then on your CD-ROM drive if you have one. When Windows finds the install utility, it displays the name and you click **Finish**. The next screen, shown in Figure A.1, is the first screen of the Microsoft Plus! installation utility.

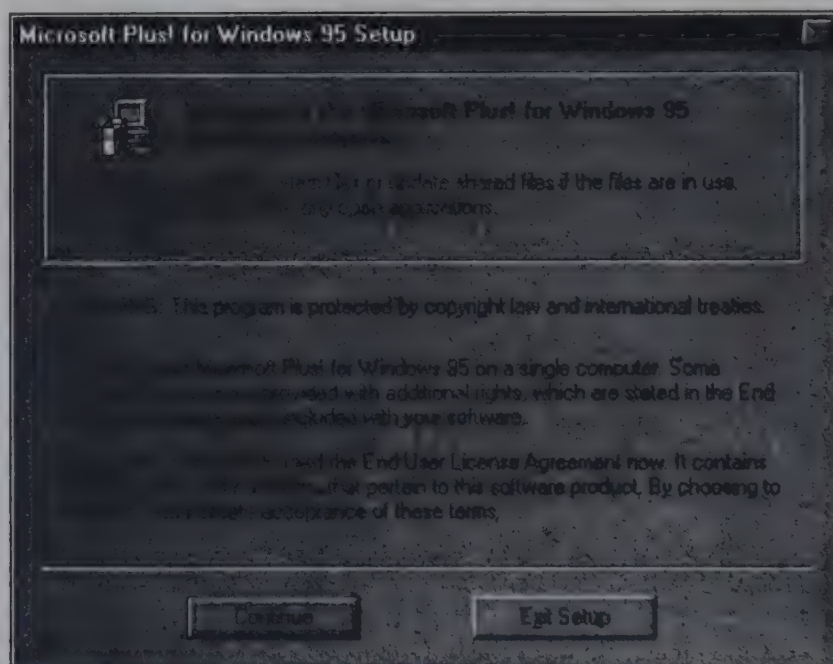


Figure A.1 The first screen of the Microsoft Plus! installation utility.

Click **Continue**. Next, you are asked for your name and organization. Fill in the information and click **OK**. When you're asked to confirm the information you just entered, click **OK**.

Next, if you purchased your version of Plus! on CD-ROM, you are asked to enter your CD key (see Figure A.2). Find the number and type it in the blanks. Click **OK**.

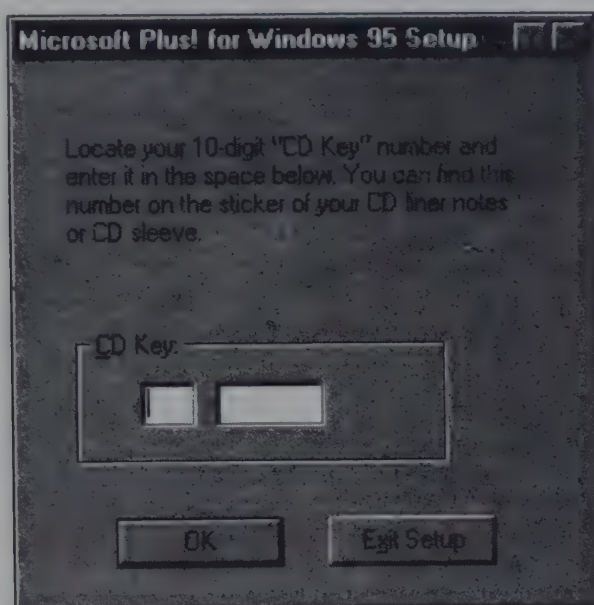


Figure A.2 Entering the CD key for your version of Plus!

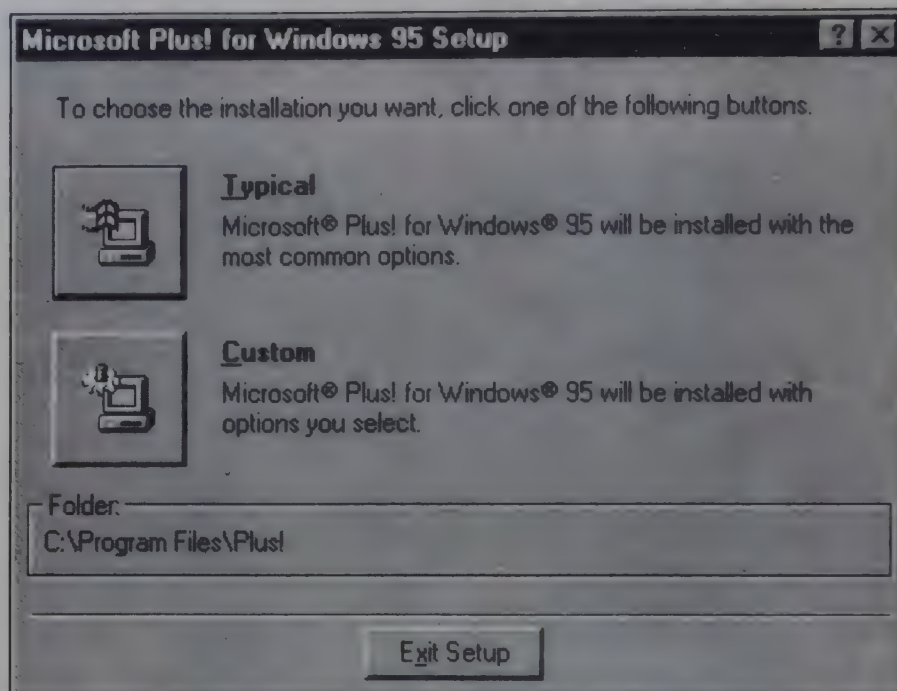
The next screen shows you your product identification number. You may want to write this number down in case you need to call technical support at some point. The number is also recorded in your system settings screen, which you can access by choosing **Start**, **Settings**, and **Control Panel** and then double-clicking the **System** icon.

Click **OK**. The next screen asks you to choose the folder in which to store Plus! The install utility automatically creates the folder for you. By default, install saves the files in the folder

`c:\Program Files\Plus!`

If you want to create a different folder, you can click **Change Folder** and enter the name of the folder you want to create and use.

Click **OK**. Setup searches for installed components and then asks whether you want a **Typical** or a **Custom** installation (see Figure A.3). For full installation, choose **Typical**. If you want to install only some of the Plus! features, click **Custom**.



*Figure A.3 Choose **Typical** to install everything; choose **Custom** to install selected features.*



N O T E

Microsoft Plus! includes the Internet Jumpstart Kit, which enables you to hook up to the Internet through either MSN or a direct provider. If you are planning to use MSN as your Internet provider, technical support at MSN suggests that you don't install the Internet Jumpstart Kit. Instead, follow these steps to get the most recent version of Internet Explorer: log on to MSN; at the MSN Central screen, choose **Categories**. Next, choose **Internet Center, Introducing Explorer**, and choose the version of Internet Explorer you want. This process ensures that you have on your computer the most recent version of released software for Internet support on MSN.

Plus! asks whether you want System Agent to run system-maintenance tasks at night. If you turn your system off at night, click **No**. If you leave your system on, click **Yes**, if that's your choice.

Setup then checks for the disk space it needs to install Plus! and begins copying files to your hard disk. If there is not enough space, Plus! displays a window in which you can choose the utilities you want to install (see Figure A.4). Click **Change Options**. You are taken back to the Typical or Custom screen. Now click **Custom**. The Custom window appears, as Figure A.5 shows.

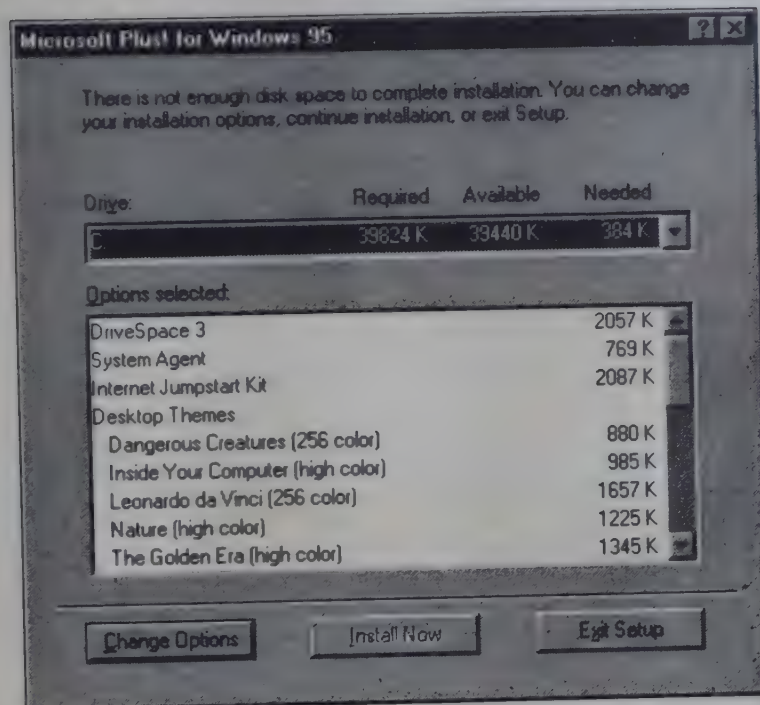


Figure A.4 If there's not enough room, you can choose the features you want.

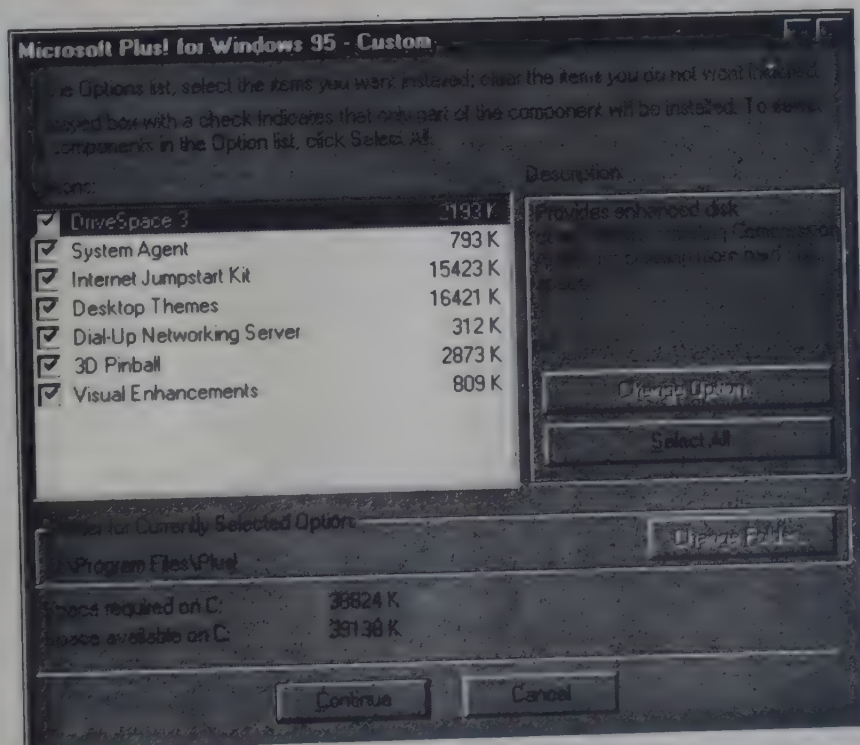


Figure A.5 Custom installation lets you pick the utilities to be installed.

Choose the items to remove by clicking the item: The check mark is removed from the item, showing that it will not be installed. When the **Space available** number (at the bottom of the window) is greater than the **Space required** number, click **Continue** to proceed with installation. You will be asked again whether you want System Agent to run at night.

Plus! then begins installing the program to the folder you specified, creating subfolders as it goes. A status bar on the screen shows you how much remains to be copied. You can quit the installation at any time by clicking the **Cancel** button.

SETTING UP SYSTEM AGENT

System Agent keeps an eye on your system while you work and can automatically run programs you specify at a given time. When you first install System Agent, the Disk Defragmenter utility is scheduled to run automatically. Disk Defragmenter scans your hard disk by default—you can have it scan floppy disks, too—looking for file fragments that are taking up disk space. The program gives you the option of saving the fragments as a file or deleting the fragments. Then it cleans up your hard disk to give you the maximum amount of available space.

Also by default, System Agent lets you know when you are getting low on disk space. A message window appears over your current program to notify you when your available disk space drops below a specified level. You can change the settings in the Low Disk Space Notification window as needed so that you'll be notified when you want to be.

When System Agent is loaded, it appears as a small icon to the left of the time in the Windows 95 taskbar. To open the System Agent window, double-click the icon. The System Agent window appears, showing you all programs scheduled to run and the time at which they are scheduled (see Figure A.6).

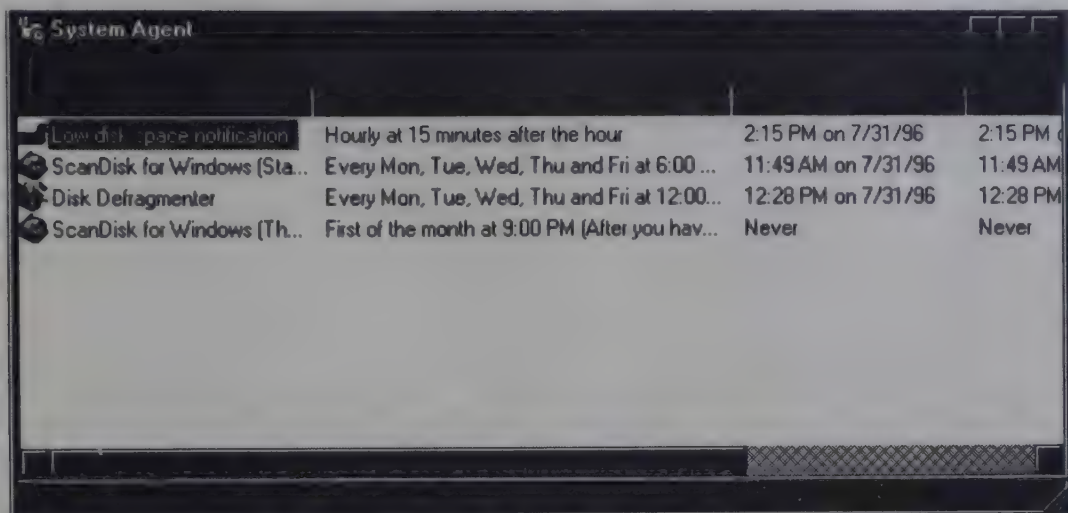


Figure A.6 The System Agent window shows you the programs that are scheduled to run automatically.

If you want to change the time a certain program is scheduled to run, open the Program menu and choose **Change Schedule**.

DRIVESPACE 3 AND COMPRESSION AGENT

Windows 95 comes with a disk compression utility called DriveSpace. Microsoft Plus! offers DriveSpace 3, which can compress drives as large as two gigabytes. DriveSpace 3 runs continually as you use your system, compressing and uncompressing files as you need them. Another disk compression utility, Compression Agent, is also available in the Plus! pack.

Disk compression creates more room on your hard disk by compressing the data already there into a smaller amount of space. The benefit of disk compression is obvious: You have more room on your disk. The drawback is that it takes longer to open a file that has been compressed. The more tightly the file has been compressed, the longer it takes to uncompress it.

One warning about disk compression, however: Data files on disks that have been compressed are often much more difficult to recover fully if your hard disk fails. This means that you may not be able to save all your data if you experience a hard disk crash. Additionally, some disk compression programs have been known to be unreliable, and you may want to investigate other choices, such as a larger capacity hard drive or a file-compression utility such as PKZIP.

DriveSpace 3 gives you a choice of three levels of compression. Standard compression cuts storage requirements roughly in half. For example, if your uncompressed file was 100K, now it will be 50K. HiPack compression shrinks files as much as 20 percent more than Standard, so that 100K file is now 30K. UltraPack compression is an even higher degree of compression. UltraPack requires the use of Compression Agent, another utility provided with Microsoft Plus!

If you decide to compress your hard disk with DriveSpace 3, double-click the **My Computer** icon on your desktop; then open the File menu and choose **Properties**. Click the **Compression** tab and click **Compress Drive**. You will be led through the process of choosing how you want the compression set up and maintained.

Compression Agent is another compression utility that, instead of altering how large the drive looks, compresses individual files so that they take up less space. The highest level of compression—UltraPack—can be achieved only by using Compression Agent. You set up Compression Agent to work with System Agent and specify the time you want the compression utility to be run.

CHANGING DESKTOPS

Another feature provided with Plus! lets you change the look of your Windows 95 desktop. When you first install Plus! you are given the option to make desktop changes. If you want to make changes later, open the Control Panel and double-click **Desktop Themes**. The Desktop window appears, as shown in Figure A.7.

Click the desired desktop in the drop-down list, and the preview window shows your choice. You can also change the pointer shape, sound assignments, and dialog box colors using Desktop Themes.

Now there's a Microsoft Plus! just for kids too. Check out <http://www.microsoft.com/kids/plusinfo.htm> to find out how you can make your Windows 95 desktop a safe and fun place for kids.

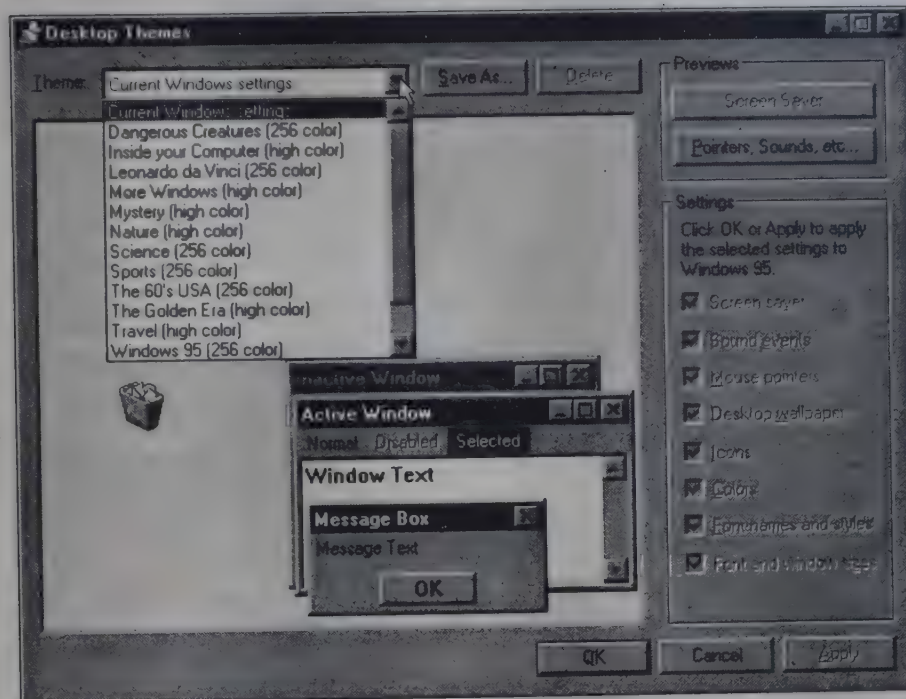


Figure A.7 You can easily change the look and color of the Windows 95 desktop.

REMOTE COMPUTING

With Microsoft Plus!, you don't have to sit at your desk all day every day in order to stay in touch with the office. You can use the Dial-Up Networking features to access your office computer using another computer at a remote site. You can also set up your computer so that others can dial into your system. The Dial-Up Networking feature is available on the CD-ROM version of Windows 95 and on Microsoft Plus!, and it's downloadable from Microsoft's Web site.

To prepare your office computer so that you can dial in from a remote location, start by double-clicking **My Computer**. Open the Connections menu and choose **Dial-Up Server**. In the Dial Up Server window, click the **Allow caller access** button. Now you can leave the computer running and call in to access it from another site.

Improvements have been made to Dial-Up Networking since Microsoft Plus! was first introduced. You can download the enhancements—which include hands-free dial up and scripting features—by accessing Microsoft's Web site and downloading the ISDN Accelerator Pack 1.1.

WORKING WITH INTERNET EXPLORER

The Plus! pack includes the Internet Jumpstart Kit, a set of Internet Tools, and the Internet Explorer, the Web browsers you use with MSN or with your own service provider to surf the World Wide Web. When you install Plus!, the Internet Jumpstart Kit is automatically selected for installation. The technical support division of Microsoft, however, suggests that if you are planning to use MSN as your Internet access provider, uncheck Internet Jumpstart Kit and instead download the most current version of Internet Explorer from the Internet Center on MSN. This arrangement ensures that you get the most current version of the browser.

For more about Internet Explorer, see Chapter 17.

3D PINBALL

Up for a quick game of pinball? Put your quarters away. Microsoft Plus! includes a pinball game you can play between meetings. To start Pinball, start Windows Explorer, go to the Plus! folder (in the Program Files folder), click **Pinball**, and double-click the **Pinball** program icon at the right side of the window. Figure A.8 shows the 3D Pinball screen. Be forewarned, however: If you're expecting a nice quiet game your boss won't hear over the cubicle wall, this one isn't it—unless you open the Options menu and turn off the **Sound** setting.

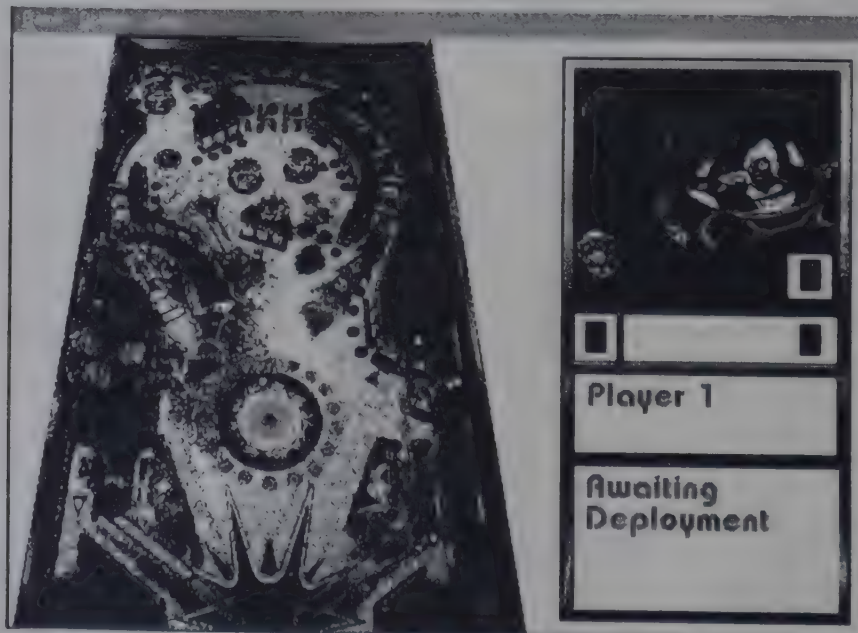


Figure A.8 Fun and games with 3D Pinball.



APPENDIX B

How To Download Add-Ons, Updates, and Enhancements

Throughout this book, you've seen notes about the latest drivers and enhancements you can add to Windows 95 to make it work better for you. How do you go about downloading those items? This appendix tells you how.

I'm assuming here that you have a modem installed on your computer and some version of Internet Explorer. If you access the World Wide Web only through online services, such as Microsoft Network or CompuServe, go to the Microsoft Windows 95 forum (search for the keywords *Windows 95*) and scan their downloadable files library. You should be able to find most updates and enhancements on any good forum that keeps users apprised of Windows 95

information; but the most reliable place to get system updates is from the mothership, Microsoft herself.

To download the items you want, follow these steps:

1. Access the Internet using your favorite Web browser.
2. Go to the Microsoft Downloads Web page by entering the following address and pressing Enter:

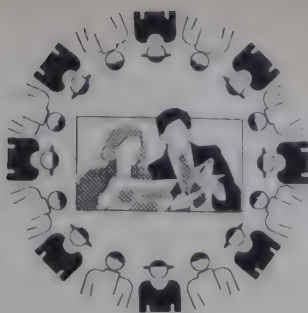
`http://www.microsoft.com/msdownload/default.asp`

3. Read through the information; navigate to the file you want by clicking the necessary links.
4. When you find the update or enhancement you want at the site you want to download from, click it to begin the process.
5. You will be prompted to choose whether you want the item installed on your machine or saved as a file. Saving as a file is a safer option and also allows you to install the upgrade or enhancement at your leisure, or on another machine.
6. Click your choice, and select a folder for the stored file (if you selected the latter of the two options).

The file is then downloaded to your computer. If you chose to save the upgrade as a file, you can later install the upgrade by double-clicking the file.

Note. You may want to add the Downloads page to your Favorites folder so you can routinely check to see what new fixes and enhancements are available. If you are using Internet Explorer 4.0 as your browser, the Smart Favorites feature will alert you when anything on the Downloads page has changed.

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4	_____
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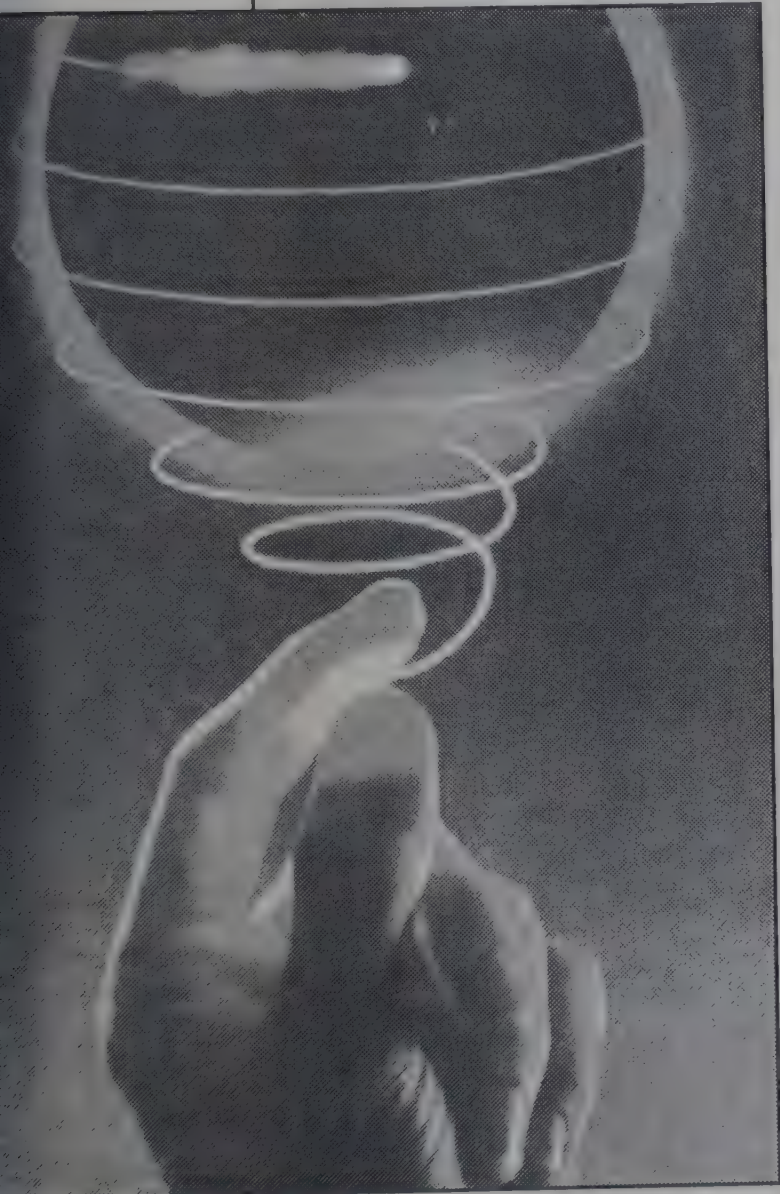
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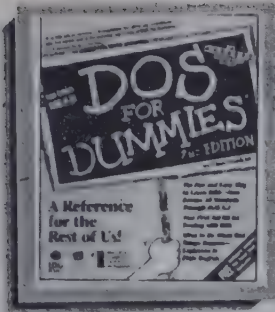
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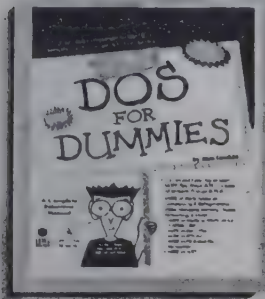


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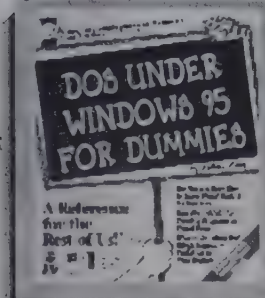
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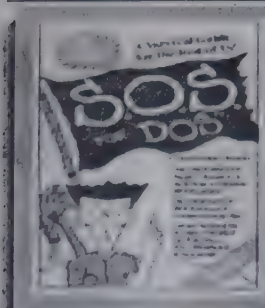


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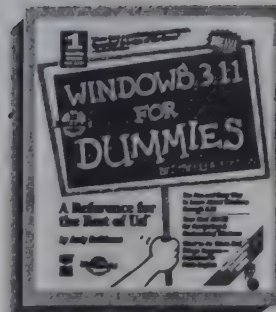


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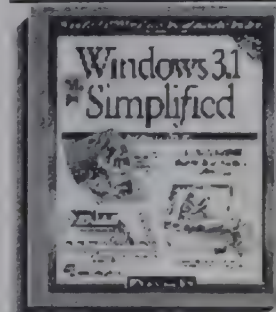


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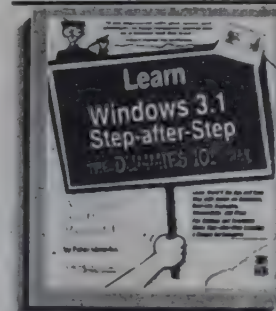


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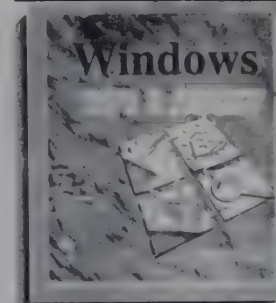


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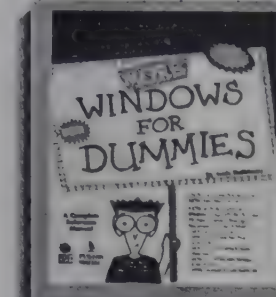


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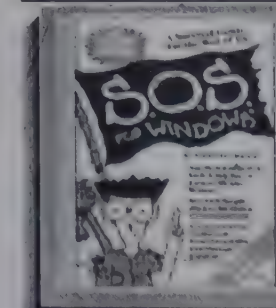


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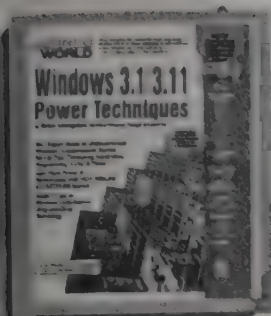


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This book will help you solve all the most common Windows problems — quickly and easily. When all else fails ... find do-it-yourself Windows solutions and tips to help readers who need immediate answers!

Pages: 225 • Price : Rs. 48 • Postage: Rs. 8

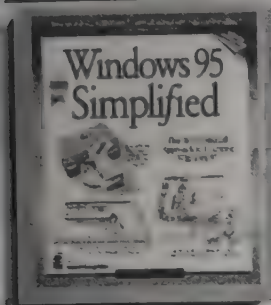


by Brian Livingston

Windows 3.1/3.11 Power Programming Techniques

Windows guru Brian Livingston reveals more valuable - Windows features. Undocumented Windows Customization Secrets, Setup Tips, programming tips & more. Helps you gain more power & performance with Hot WIN.INI & SYSTEM.INI Secrets and provides tips on Drag-and-Drop technology.

Pages: 700 • Price : Rs. 350 (with 2 disks)
• Postage: Rs. 15

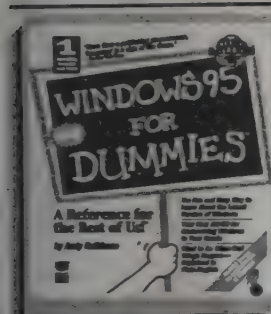


by Ruth Maran

Windows 95 Simplified

In addition to covering all the basics of Windows 95, this 3D-Visual guide also includes chapters on Windows Accessories. Plug and Play, Running DOS, Improving Windows Performance and Sharing Data using Object Linking and Embedding.

Pages: 250 • Price : Rs. 150 • Postage: Rs. 10

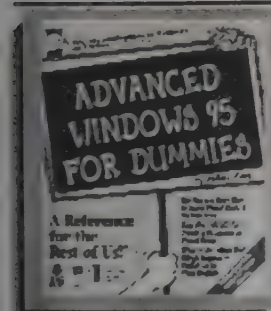


by Andy Rathbone

Windows 95 For Dummies

The fun and easy way to learn about the latest version of Windows. Discusses simple and hard ways to install Windows and how to customize. Concrete explanations of Windows' basics and new, updated features allow users to make an easy transition to Windows 95.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

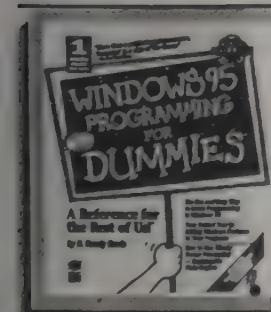


by Andy Rathbone

Advanced Windows 95 For Dummies

Provides the user Advanced tips, shortcuts, troubleshooting and explanations and basics of Windows with advice on running old DOS programs on Windows 95. Discusses 'plug & play', taskbar, explorer, short button, unzipping files and getting rid of programs. Describes how to customize desktop and install new software.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

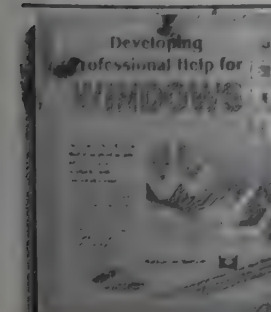


by S. Randy Davis

Windows 95 Programming For Dummies

Jump to programming for Windows 95. This book covers all the topics of Windows programming - callbacks, messages, memory, multitasking. Helps adding Windows features like Scrollbars and drop down menus and provides constant comparisons to programming for DOS

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

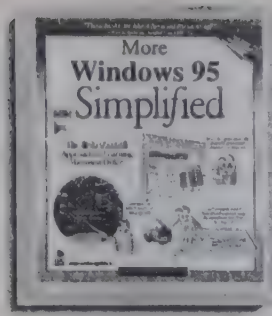


by Rajkumar Sedani

Developing Professional Help for Windows

This book is designed for all those wanting to incorporate professional feature-help in their applications. It covers various aspects and techniques required for professional help system. It explains everything that you need to create a state-of-the-art help system, Hypertext, text-based jumps/links to associated help topics.

Pages: 184 • Price: Rs. 145 (with disk)
• Postage: Rs. 10

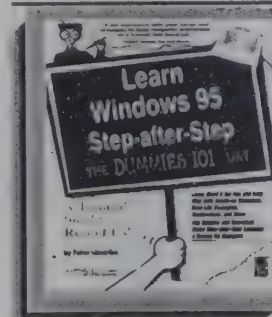


by Ruth Maran

More Windows 95 Simplified

Features visual explanation of tasks with simple words and pictures. It probes beginner and intermediate subjects like OLE, automatic application startup, font installation, networking, portables, multimedia, adding hardware & software, the built-in Internet features of Windows 95 and much more. A complete chapter will be added on sharing data using OLE technology and the Microsoft Network.

Pages: 430 • Price : Rs. 150 • Postage: Rs. 10

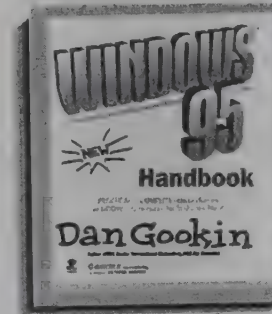


by Peter Weverka

Learn Windows 95 Step-after-Step ... the Dummies 101 Way

Learn how to use this operating system. This book will take the user through the basics of the new operating system using progress checks that help the user decide if he or she is ready to move on to the next task. Tips and shortcuts for getting up to speed quickly.

Pages: 430 • Price : Rs. 195 (with Disk)
• Postage: Rs. 10

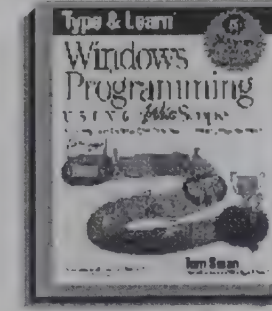


by Dan Gookin

Windows 95 Handbook

Get more productivity and power from Windows 95. Millions of readers who just don't have the time to learn the who, what, whys and whereas of each and every Windows 95 features you'll use the most, including the Windows explorer, My computer, multitasking, applets, disk drives, on-line communications, networking, on-line communications, networking, dialogue boxes and much more!

Pages: 600 • Price : Rs. 195 • Postage: Rs. 10



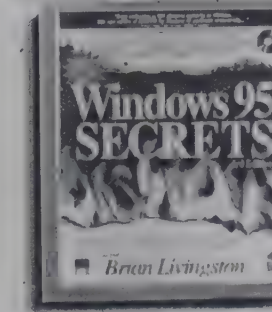
by Tom Swan

Type & Learn

Windows Programming (Ver. 3.1)

Learn Windows event-driven programming with WinScope as a guide using Type & Learn methodology. Teaches event driven programming using language independent WinScope to provide immediate results. Reverse-engineering code shows programming mistakes and how to get back on track.

Pages: 520 • Price : Rs. 295 (with disk)
• Postage: Rs. 15

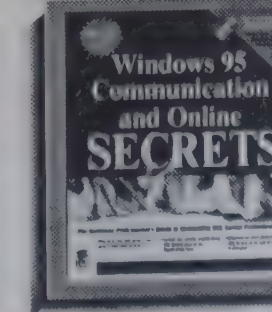


by Brian Livingston and Davis Straub

Windows 95 Secrets

This book provides developers, computer enthusiasts, MIS and IT Gurus with productivity enhancing tips and undocumented and little known facts which Microsoft doesn't - and won't - document.

Big size Pages: 800 • Price: Rs. 295,
Rs. 450 (with CD-ROM) • Postage: Rs. 15

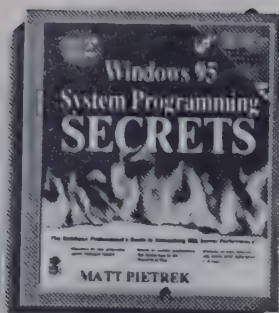


by Andy Reese

Windows 95 Communication & Online Secrets

Digs deep into the communication powers of Windows 95 uncovering little-known tips and techniques about OLE 2.0, DDE, Telephony, TCP/IP, PPP, Hyper Terminal, MAPI, PCMCIA, Voice View Modems and more. Teaches in a step by step way how to use Windows 95 to easily and instantly communicate with the world.

Pages: 550 • Price : Rs. 325 (with CD-ROM)
• Postage: Rs. 15

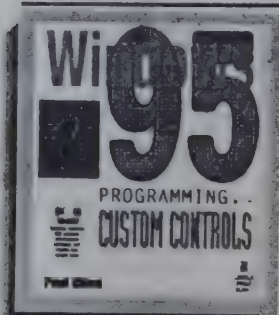


by Matt Pietrek

Windows 95 System Programming Secrets

This book digs into the internal details of Windows 95 and explains the relationship between Windows 95, Windows NT and WIN 32 to help you build stronger programs. Provides detailed description of user and GDI system, memory management, Win 16 modules and tasks, processes and threads.

Pages: 800 • Price : Rs. 395 (with disk)
• Postage: Rs. 15

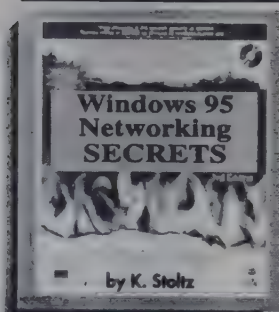


by Paul Cilwa

Windows 95 Programming with Customs Controls

Learn the art of creating Custom Controls for Windows 95. Explains how to move from the world of 16-bit VBX programming to 32-bit OCX programming. Teaches you to use C++ class library for VBX's. Provides VBGenine, a code generator for VBX's similar to Microsoft's OLE control wizard.

Pages: 600 Price : Rs. 345 (with Disk),
Rs. 450 (with CD-ROM) Postage: Rs. 15

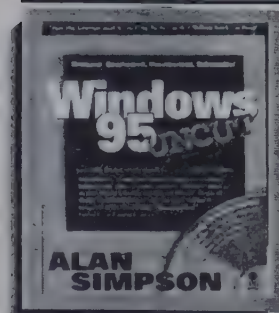


by K. Stoltz

Windows 95 Networking Secrets

Covering undocumented and little-known aspects of networking with Windows 95. Tips and techniques for installation, configuration, use and management of the peer-to-peer networking features built into Windows 95. Dig deep into Windows 95 to connect to other networks including the Internet. Detailed discussion regarding connecting to and using multiple networks concurrently is illustrated.

Pages: 800 • Price: Rs. 450 (with CD)
• Postage: Rs. 15



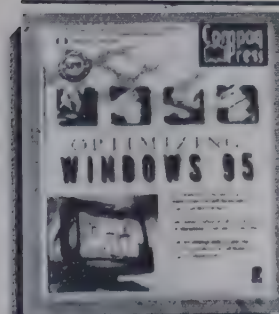
by Alan Simpson

Windows 95 Uncut

This book reveals everything about Windows 95 from setup to shutdown. It also serves as a comprehensive tutorial/reference for anyone who wants to use Windows 95.

CD-ROM contains accounting, payroll, inventory, shipping & scheduling programs, FaxMail, PKZip, CAD/Draw and includes hobby software, Internet Utilities, Multimedia accessories, Programming tools and games.

Pages: 600 • Price : Rs. 295, Rs. 375 (with 2 disks)
Rs. 450 (with CD-ROM) • Postage: Rs. 15

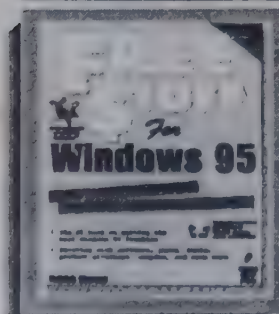


by B.J. Sineath

Optimizing Windows 95

Helps squeezing every ounce of performance out of your Windows 95 based system. It provides the latest and greatest performance to manage files and memory, multitask efficiently, print faster and much more! Disk includes performance enhancers, wall papers, games and many other goodies.

Pages: 350 • Price : Rs. 195 (with disk)
• Postage: Rs. 10

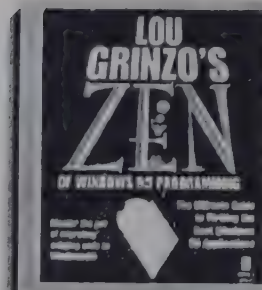


by Patrick Vincent

Free Stuff for Windows 95

This book will show you how to get free software, resources, web site information, Microsoft Network information and access, techniques, tips and advice from experts, newsletters, magazines and more. Provides information on where you can get free software, shareware, sample games, utilities and newsletters. Guides in finding Free Stuff from all the Online Services

Pages: 600 • Price : Rs. 150 (Book only),
Rs. 299 (with CD-ROM) • Postage: Rs. 15

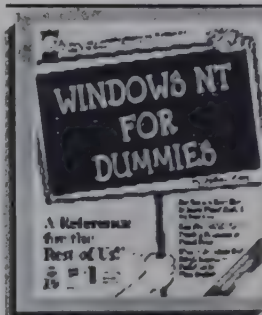


by Lou Grinzo

Zen of Windows 95 Programming

Programmer who wants to develop real software for Win 95, or other 32-bit Windows including WindowsNT in a do it right and do it once approach. Uncovers the mysteries that exist between various versions of Windows. Discusses the secrets, pitfalls, and challenges of migration to 32-bit Windows.

Pages: 800 • Price : Rs. 345 (with Disk)
Rs. 450 (with CD-ROM) • Postage: Rs. 15

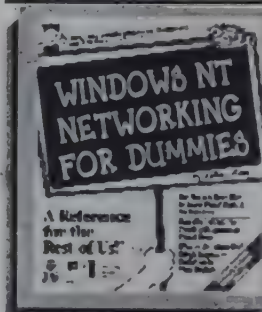


by Andy Rathbone

Windows NT For Dummies

Learn to manage the powerful network operating system. Windows NT covers the network administration features, the management utilities and tips for managing large number of services. Discusses how to migrate from NetWare and integrate the NT server with NetWare LANs by using Windows NT migrating tools.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

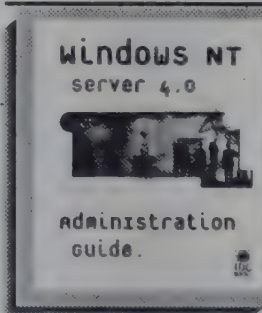


by Ed Tittel

Windows NT Networking For Dummies

An Informative book about Windows NT. It provides background and hands-on information to let ordinary readers design, install and operate a small scale local area network. Tips and tricks to installing the hardware and software needed to establish the LAN. Covers all the features of a Windows NT network.

Pages: 384 • Price : Rs. 175 • Postage: Rs. 10

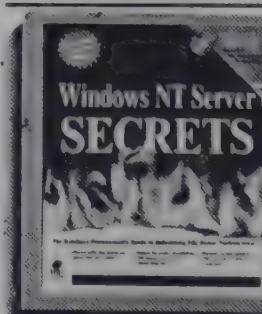


by Robert Cowart

Windows NT Server 4.0 Administrator's Guide

The excitement and demand for Windows NT Server training in both the consulting and corporate communities is unprecedented. Features task-oriented information distilled from an experienced professional that empowers system and network managers to install, configure, and upgrade Win. NT server 4.0 platforms.

Pages: 850 (in Press)

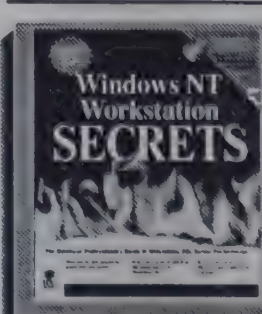


by Hilley

Windows NT Server 4 Secrets

Undocumented tips, techniques, and work arounds for one of the world's most popular operating system! Features undocumented tips, shortcuts, and step-by-step instructions that guarantee optimum performance from setup to shutdown. Uncovers installation, configuration and migration, secrets that would take months to uncover on your own.

Pages: 800 • Price: Rs. 450 (with CD)
• Postage: Rs. 15



by Hilley

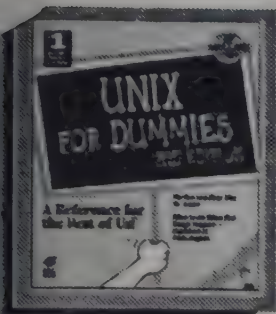
Windows NT Workstation 4.0 Secrets

With all the clarity and thoroughness you'd expect from a Secrets title, this book is rich in content and detailed from cover to cover. Windows NT is hot, and nowhere else will readers find as many time-saving hints, and discover hidden productivity in using this desktop operating system.

Pages: 750 • Price: Rs. 450 (with CD)
• Postage: Rs. 15

OPERATING SYSTEM/WORD PROCESSING

WORD PROCESSING

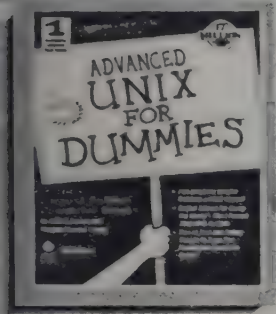


UNIX For Dummies (2nd Edition)

The friendly guide that takes the mystery out of UNIX. With a special DOS to UNIX conversion guide. Discusses basic commands of politically correct UNIX covering System V UNIX and the Bourne Shell command Processor. Tells how to use Text editor run shell, search files and measures to follow during emergency.

Pages: 352 • Price : Rs. 135 • Postage: Rs. 10

by John Levine and Margaret Levine Young

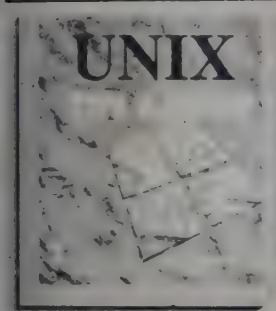


Advanced Unix For Dummies

Helps to overcome the technical and non-interactive barriers by UNIX and advances the reader's perception. Provides super hardware & software tips including how to send and read electronic mail. Explains how to share printers, files, and even computers on a network, and provides quick solutions to problems. Includes an expanded glossary.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

by John Levine and Margaret Levine Young

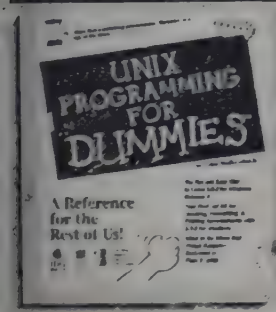


UNIX Tips & Tricks

Learn new ways to use some commands to your everyday repertoire. No matter what UNIX "flavor" you use, if you're tired of just getting around and are ready to get ahead, put the tricks of UNIX masters to work for you with UNIX Tips and Tricks. Aimed at both experienced and novice users, learn to work better faster and more efficiently.

Pages: 350 • Price: Rs. 99 • Postage: Rs. 10

by Russel & Crawford

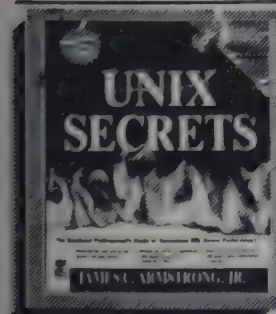


UNIX Programming For Dummies

Explains the programming basics, then moves on to how users can customize UNIX to perform several processes simultaneously. Features such as vi and ed editors, shell scripts, FORTRAN and Pascal compilers will be covered as the user journeys through this vast operating system.

Pages: 400 • Price: Rs. 150 • Postage Rs. 10

by Dummies Technology Press

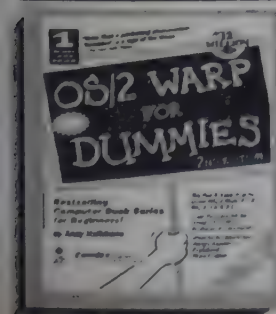


UNIX Secrets

This is the premier book for expanding your knowledge of Unix and increasing your UNIX skill level! Explores all aspects of obtaining, installing, operating and maintaining UNIX, targeted primarily at the intermediate Unix user who is already familiar with the basics of the UNIX tools available, expert users will find a comprehensive array of tips and techniques.

Pages: 968 • Price : Rs. 450 (with CD), Rs. 325 (Book only) • Postage: Rs. 15

by James Armstrong

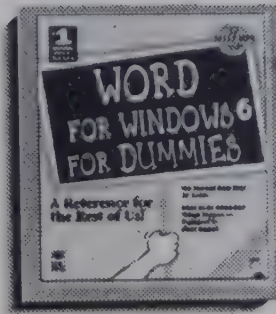


OS/2 Warp For Dummies

In this book you will find a wealth of OS/2 hints and tips written in plain English on everything you should know about OS/2 Warp. Includes specific tips for running Windows programs, provides OS/2 paint-a-visual learning guide and functions and command index.

Pages: 350 • Price : Rs. 175 • Postage: Rs. 10

by Andy Rathbone

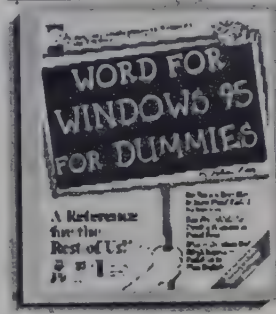


Word for Windows 6 For Dummies

Master Word for Windows 6 basics as well as its new desktop publishing features. Explains cut and paste, find and replace, format and print, delete and destroy. Discusses how to master the new interface and use Word for Windows 6 wizards and new options like Auto Format and Auto correct and much more!

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

by Dan Gookin

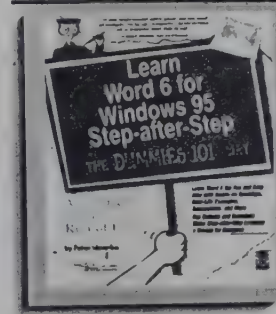


Word for Windows 95 For Dummies

This book explains the complicated features of Word for the new 32-bit operating system - Win 95. Covers word processing essentials, explains the use of spell, grammar checkers and wizards. Provides tips and shortcuts for quick routes to improved productivity. Shows how to create bulleted lists and much more.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

by Dan Gookin

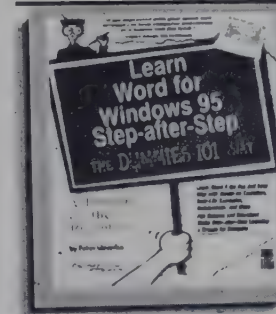


Learn Word 6 for Windows Step-after-Step ...The Dummies 101 way

Explains, in a step-by-step fashion, how to do word-processing tasks with Word 6. Simple tasks such as opening and creating documents are covered at the beginning of the book. And as the book progresses, the lessons become more harder, the idea being that the skills that you acquire will enable you to do more complex tasks that are presented at the end of the book.

Pages: 250 • Price: Rs. 195 (W/Disk) • Postage: Rs. 10

by Peter Weverka

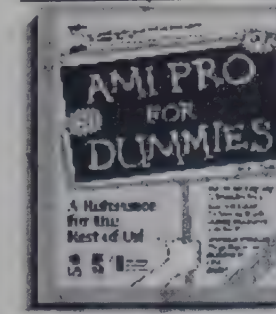


Learn Word for Windows 95 Step-after-Step ...The Dummies 101 Way

Users will get the instruction they need to actually learn how to use the operating system. This book will take the user through the basics of this new operating system using progress checks that help the user decide if he or she is ready to move on to the next task. Packed with tips and shortcuts for getting up to speed quickly.

Pages: 250 • Price: Rs. 195 • Postage: 10

by Peter Weverka

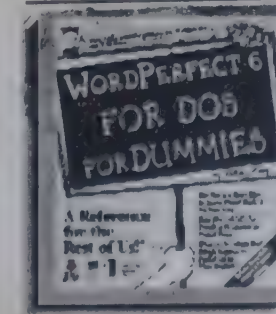


Ami-Pro For Dummies

Learn the ins and outs of Ami-Pro in an easy way with explanation of style sheets, frames, macros, equation editor and power fields. Learn how to create documents and export them. Teaches using graphics, tables, clip art, and drawings in document. Explains tools such as: spell-checker, grammar checker, thesaurus, search and more.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

by Jim Meade



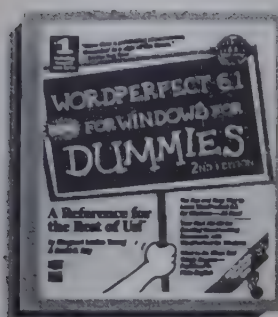
WordPerfect 6 for DOS For Dummies

Covers the hottest PC word processor WordPerfect ver. 6 for DOS, which has over 13 million users worldwide! How to create and format documents for various purposes and different styles. Describes how to manage graphics, fonts and outlining equations with emphasis on everyday tasks.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

by Dan Gookin

WORD PROCESSING

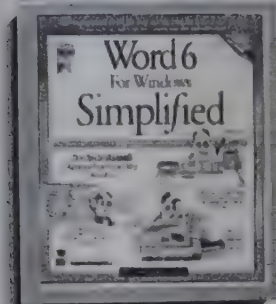


WordPerfect 6.1 for Windows For Dummies (2nd edition)

In-depth, friendly, advice on creating great-looking documents loaded with hot tips, shortcuts & simple instructions for complex features. Learn creating & formatting documents in style and get coverage of advanced topics including graphics, WP Draw, textart, and multimedia.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

by Margaret Levine Young and David C. Kay

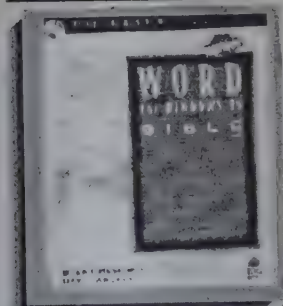


Word 6 for Windows Simplified

Learn Word 6 for Windows using this proven 3-D visual approach. Perfect for the beginner or the busy executive who wants to learn fast with a minimum amount of effort.

Pages: 256 • Price : Rs. 150 • Postage: Rs. 10

by Ruth Maran

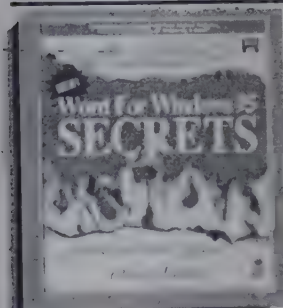


Word for Windows 95 Bible

Create and read WWW pages from Word, incorporating DTP techniques into Word documents, and formatting documents. Provides extensive coverage of templates, Wizards, Applets including MS Draw, MS Graph, Word ART and the popular Microsoft CD - the Bookshelf.

Pages: 1000 • Price : Rs. 325 • Rs. 375 (with disk)
Rs. 450 (with CD-ROM) • Postage: Rs. 15

by Brent Heslop and David Angell

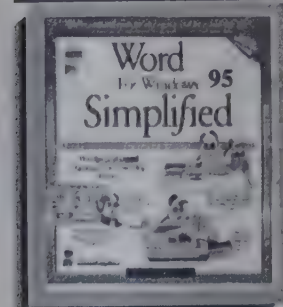


Word for Windows 95 Secrets

This expert guide provides little known and undocumented features to turn you into an efficient and productive Word for Windows guru. New features including Highlight, Internet Assistant, Long File names, Address Books, Wizards, how to save time, customizing Word, use OLE and format shortcuts.

Pages: 800 • Price : Rs. 325 (Book only)
Rs. 450 (with CD-ROM) • Postage: Rs. 15

by Doug Lowe



Word for Windows 95 Simplified

This 3D visual guide 'read less, learn more' approach teaches you everything about the latest version of Microsoft Word under Windows 95

Pages: 240 • Price : Rs. 150 • Postage: Rs. 10

by Ruth Maran



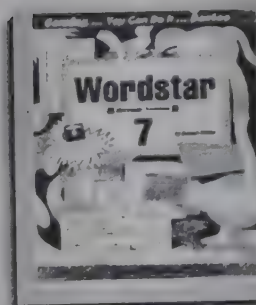
WordPerfect 6.1 For Windows Simplified

Designed for individuals who want to learn from pictures with a minimum number of words, this book will get users of the latest version of WordPerfect for Windows up and running fast!

Pages: 240 • Price : Rs. 150 • Postage: Rs. 8

by Ruth Maran

WORD PROCESSING/C/C++ PROGRAMMING

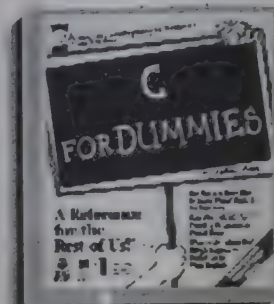


WordStar Through Ver. 7.0

This book describes and evaluates the new features of the latest release of WordStar. It provides enjoyable and readable descriptions of WordStar's famous and frequently used styles and features covering the various versions of WordStar.

Pages: 300 • Price : Rs. 150 (with Disk)
• Postage: Rs. 8

by Subhash Mehta

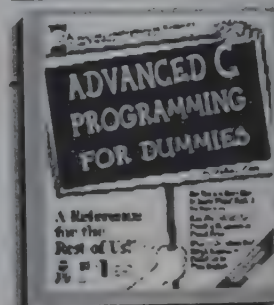


C For Dummies

Teaches the essentials of C programming in a unique, entertaining style. Programming Microsoft/Borland versions of C to make your computer your slave. Deals with dreaded maths, graphically speaking, and common beginner mistakes and their avoidance.

Pages: 552 • Price : Rs. 150 • Postage: Rs. 8

by Dan Gookin

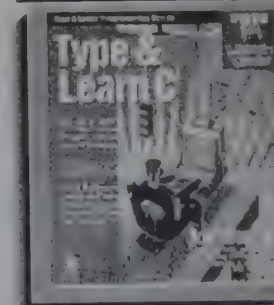


Advanced C Programming For Dummies

This book is sequel to bestselling C for Dummies. It explains advanced functions of C and includes coverage on graphics and sound (with Borland C++), comparing string variables, pointers and structures. Helps overcome stumbling blocks to C by providing tips to programming the fast and easy way.

Pages: 516 • Price : Rs. 150 • Postage: Rs. 8

by Dan Gookin

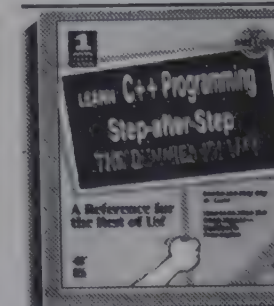


Type & Learn 'C'

Why spend thousands in learning C programming when this hands-on, fast-paced tutorial guarantees to teach even the beginners, how to master C. Chapters that present programming concepts and techniques in manageable sections. Teaches programming all ANSI C Compilers.

Pages: 456 • Price : Rs. 245 (with disk)
• Postage: Rs. 15

by Tom Swan

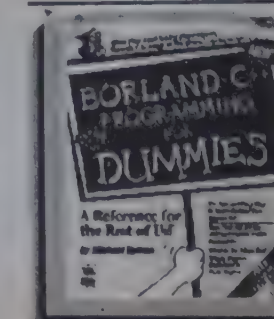


Learn C++ Programming Step-after-Step ...Dummies 101 Way

Beginners with no prior experience in any programming language can learn to write C++ programs. With this hands-on exercises and easy-to-view screen shots, users will immediately begin to understand C++ programming enough to move forward and begin writing programs.

Pages: 272 • Price : Rs. 195 (with disk)
• Postage: Rs. 15

Namir Clement Shamas

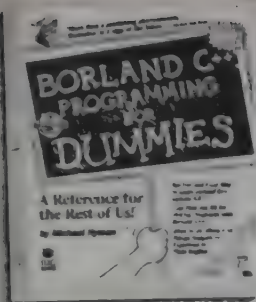


Borland C++ Programming For Dummies

Learn to program quickly and painlessly even if you don't have the time or the inclination to learn everything about Borland C++. Explains Borland C++ technology, building blocks and the most important features of version 4.0. Helps in learning the Compiler quickly.

Pages: 528 • Price : Rs. 150 • Postage: Rs. 10

by Michael Hyman

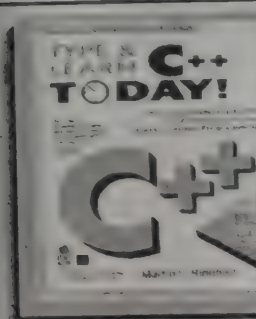


Borland C++ 5 Programming For Dummies

Teaches beginners to program quickly and painlessly in the fun and easy way. Covers Borland C++ version 4 and 5. Acquaints you with Borland C++ terminology, development tools, editors, debuggers, compilers, command line tools and standard template library.

Pages: 450 • Price: Rs. 225 (with disk)
• Postage: Rs. 10

by Michael Hyman



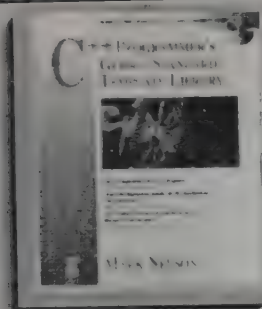
Type & Learn C++ Today

The complete learning system for first time C++ programmers. Learn writing programs with this unique and fully integrated Type & Learn methodology. Provided with user-tested-tutorial to build your own programs.

Software on disk includes Borland's Turbo C++ compiler and tutorial programs.

Pages: 608 • Price: Rs. 295 (with disk)
• Postage: Rs. 15

Series Editor Tom Swan

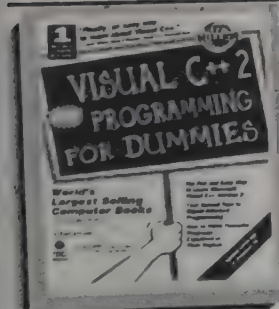


C++ Programmers Guide to the Standard Template Library

This book is a revolutionary first in showing C++ programmers how to use the STL in C++. Includes an annotated reference with the STL specifications. Covers associative arrays, allocators, iterators, algorithms, and numerous operations. A complete overview discussing templates and STL containers.

Pages: 700 • Price: Rs. 325 • Postage: Rs. 10

by Mark Nelson



Visual C++ 2 Programming For Dummies

Master Visual C++ fundamentals and get an overview of its editors, debuggers and command line tools. Discusses how to fix things when they go wrong.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

by Michael Hyman and Bob Arnsen

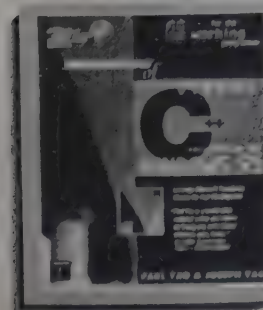


Heavy Metal Visual C++ Programming

Ultimate guide to master the insides of Visual C++ and learn power programming techniques. Helps you master document handling, bitmaps, metafiles, exception handling and DLLs. Teaches customizing controls and making one's own menu items. Covers version 1.5.

Pages: 500 • Price: Rs. 295 (with Disk)
• Postage: Rs. 15

by Steve Holzner

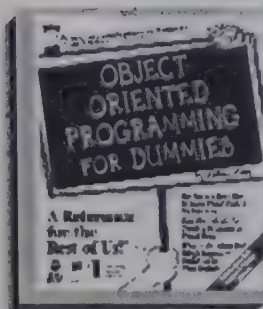


Foundations of Visual C++ Programming for Windows 95

This book addresses real world programming for all your future Visual C++ developments. Shows how to understand every facet of Visual C++ for Windows 95 in a task approach and provides tips on tools, internals, design issues, avoiding common mistakes and testing problems.

Pages: 700 • Price: Rs. 325 (with disk)
• Postage: Rs. 15

by Paul Yao

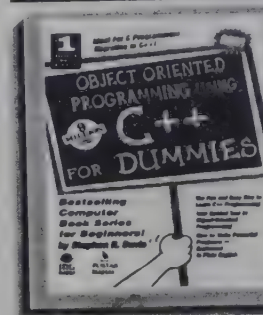


Object Oriented Programming For Dummies

This book explains the basics of Object Oriented Programming including concepts behind objects, and Object-oriented development cycle in plain, easy-to-follow English. Simplifies terminology and explains all the topics within OOP community in language independent terms.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

by Bruce Webster

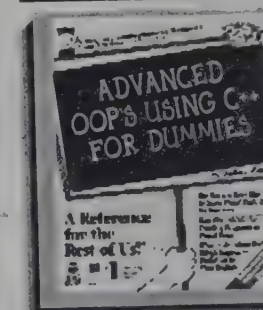


OOP's Using C++ For Dummies

Make a jump to Object Oriented methods of programming which helps you learn programming in an easy way. Explains the basics and helps you design and write your own programs. Written for C programmers migrating to C++. Covers Borland C++, Visual C++ and Turbo C++. Explains 'What, why and how it works of every C++ feature.

Pages: 424 • Price: Rs. 135 • Postage: Rs. 10

by S.R. Davis



Advanced OOP's Using C++ For Dummies

An ideal companion to bestselling 'OOP's Using C++ for Dummies'. Various features of C++ including templates, exceptions, and overloading functions. Shows how C++ is used in the design, implementation, debugging and maintenance stages of application development.

Pages: 350 • Price: Rs. 225 (w/Disk) • Postage: Rs. 10

by S. R. Davis

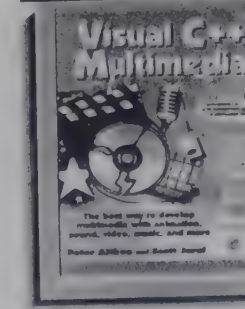


Foundations of C++ and Object Oriented Programming

This book is the first comprehensive tutorial and reference to fully explore professional development of C++ and OOP's under Windows 95. Provides full coverage of MFC and STL libraries and a special chapter on using Visual Basic with C++.

Big size Pages: 600 • Price: Rs. 450 (with CD)
• Rs. 345 (with disk) • Postage: Rs. 15

by Namir

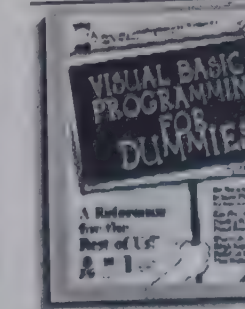


Visual C++ Multimedia Adventure set

Develop multimedia with animation, sound video, music & more! Shows you how to develop fun and exciting multimedia applications with sound, animation, music, video, hypertext graphics, imaging and more! Provides tips and practical advice to help you through every development process.

Pages: 560 • Price: Rs. 450 (with CD-ROM)
Rs. 295 (Book only) • Postage: Rs. 15

by Peter Aitken & Scott Jarol

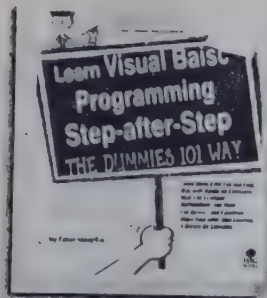


Visual Basic 3 Programming For Dummies

Here's the friendly, non-threatening reference for Visual Basic, the programming language for non-programmers. Covers Ver. 3. Learn to program in Visual basic right away! Discusses how-to write Basic code, more decisions, construct loops, write sub-programs and more!

Pages: 400 • Price: Rs. 135 • Postage: Rs. 10

by Wallace Wang

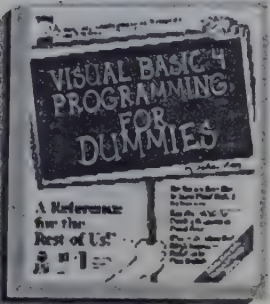


Dummies Technology Press

Learn Visual Basic Programming Step-after-step ...the Dummies 101 Way

From the fundamentals of writing code to designing a cool user interface, this book explains this popular language in terms of beginners can understand. With this tutorial, future programmers will learn how Visual basic works, how to design an interface, how to create menus and how to write subprograms.

Pages: 250 • Price: Rs. 190 (with Disk)
• Postage Rs. 10

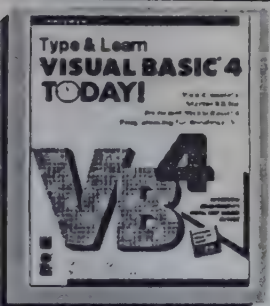


by Wallace Wang

Visual Basic 4 Programming For Dummies

This is the fast and friendly reference to Visual Basic, the programming language for nonprogrammers. Teaches writing Basic code, designing User Interface and creating pretty menus. Describes making decisions, loops, subprograms and database programs.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

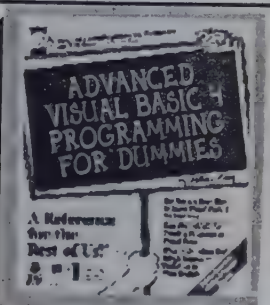


by Tom Swan (Series Editor)

Type & Learn Visual Basic 4.0 Today

Finally, an integrated learning environment for novice programmers. On day one, you will learn writing Basic code and by the end of a fortnight you will be writing useful and effective programs.

Pages: 500 • Price : Rs. 295 (with disk)
• Postage: Rs. 15

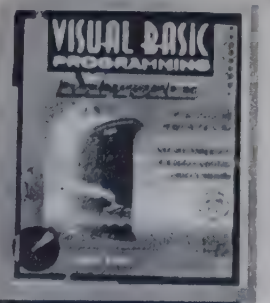


by Macro Mason

Advanced Visual Basic 4 Programming For Dummies

Covers the newest release of Visual Basic from the fundamentals of writing code to designing a beautiful user interface. The book spares readers from assuming and provides for no unnecessary details. Discusses OLE, creating your own objects and writing strong VB code.

Pages: 400 • Price : Rs. 225 (with disk)
• Postage: Rs. 10



by Peter G. Aitken

Visual Basic 4 Programming Explorer

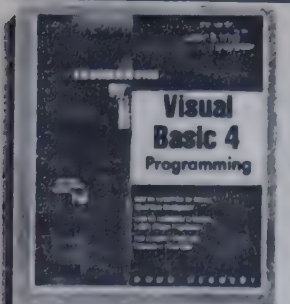
This book teaches building 'real' programs on Visual Basic. Teaches the easy way to create Windows applications. It includes great programming objects from database applications to graphics and multimedia. Covers features and powerful new control types of new version of VB.

Pages: 600 • Price : Rs. 295 (with disk)
Rs. 395 (with CD) • Postage: Rs. 15

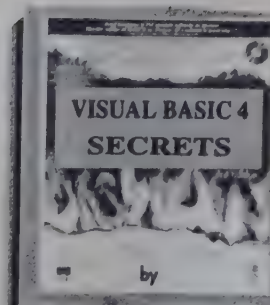
Foundations of Visual Basic 4 Programming

The ultimate source to discover the fundamentals for all of your future programming in the latest release of Visual Basic. It uses task approach to discuss every facet of Visual Basic includes tips on Tools, Internals, Design issues, avoiding common mistakes and testing problems.

Pages: 800 • Price : Rs. 325 (with Disk)
Rs. 450 (with CD-ROM) • Postage: Rs. 15



by Doug Hergert

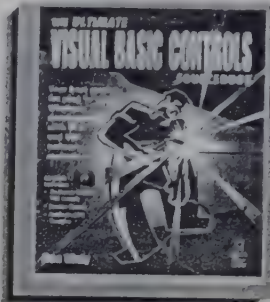


by Harold Davis

Visual Basic 4 Secrets

Visual Basic 5 Secrets will collect, for the first time in one place, everything the VB programmer needs to create sophisticated professional applications. And it will explore that vast system of extensions, techniques and third party tools that has grown up around the language.

Pages: 760 • Price: Rs. 450 (with CD)
• Rs. 345 (with disk) • Postage: Rs. 15

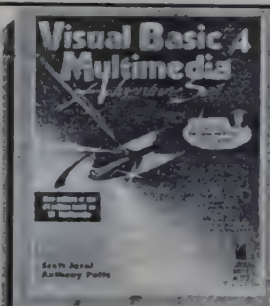


by Don Kiely

The Ultimate Visual Basic Controls Source Book

This book is one-stop source for Visual Basic programmers interested in saving time and money by developing applications with custom controls. Presents hundreds of commercial and shareware controls for a wide range of applications with software code in CD-ROM.

Pages: 800 • Price: Rs. 325 (without CD-ROM),
Rs. 450 (with CD-ROM) • Postage: Rs. 15

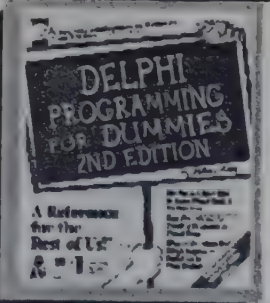


by Scott Jarol & Anthony Putts

Visual Basic 4 Multimedia Adventure Set

Provide developers all the necessary tools, techniques and tips to create better, faster multimedia applications using Visual Basic. Updates all code to take advantage of 32-bit operating systems! Includes backward compability to cover VB 3.0 users. Plus a tutorial on using WinG and WinToon.

Pages: 800 • Price : Rs. 295 (without CD-ROM)
Rs. 450 (with CD-ROM) • Postage: Rs. 15



by Niel Rubenking

Delphi Programming For Dummies (2nd Edition)

This book provides the fun and easy introduction to Borlands newest hot-selling language product — Delphi. Teaches how to create and run programs and applications in Delphi. Provides clear explanation of forms, properties, instal components and programming concepts.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10



by Jeff Duntmann

Delphi Programming Explorer

Your comprehensive guide to Delphi — the new Rapid Application Development (RAD) tool that allows programmers to create, in only few days, programs that have taken months the traditional way. Teaches RAD, event and object Pascal, Multimedia the windows way and data aware components.

Pages: 600 • Price : Rs. 325 (with disk)
• Postage: Rs. 15



by James Cogswell & Tom Swan

Type & Learn Delphi 2 Database Programing Today

Programmers complete starter kit to developing database applications with Delphi. How to build back-end databases to the WWW; use the built in Delphi controls and work with SQL and the Borland Database engine.

Pages: 600 • Price : Rs. 295 (with disk)
• Postage: Rs. 15

Foundation of Delphi Application Development

A complete guide to Delphi that helps create programs as powerful and efficient as ones written in C and C++. Gives a comprehensive intro to all Delphi's features, a section on Object Pascal and information on the visual component library.

Pages: 700 • Price : Rs. 345 (with disk)
Rs. 450 (with CD-ROM) • Postage: Rs. 15

Delphi 32-bit Secrets

The internationally acclaimed programming author shares his Delphi secrets with other developers revealing the art, science and lore associated with this powerful new tool. Delphi 32-bit secrets explores the vast system of Delphi extensions, techniques, and third party tools, providing all the information needed to create sophisticated professional applications.

Pages: 800 • Price :Rs. 450 (with CD)
• Postage: Rs. 15

Developing Custom Delphi Components

Gets you up to speed with Delphi's new Object Pascal object model and takes you through the development process for many different kinds of components. You'll find lots of superb example code in Object Pascal and a full suite of ready-to-use components with royalty-free source code.

Pages: 800 • Price : Rs. 345 (with Disk)
Rs. 450 (with CD) • Postage: Rs. 15

Delphi Multimedia Adventure Set

Master the art of creating multimedia applications with Delphi. Features more than 800 pages of expert instruction and a CD ROM full of tools you can use to get started today!

Pages: 800 • Price: Rs. 450 (with CD)
• Postage: Rs. 15

Delphi Programming Problem Solver

Full coverage of the new 32-bit application development environment. Every chapter tackles a new subject, and each subject gets multilevel treatment: the question or problem followed by background information, special notes or tips and where appropriate, an example illustrates by working application.

Pages: 700 • Price: Rs. 325 (with Disk)
• Postage: Rs. 15

dBase 5 for DOS For Dummies

Introduces beginners to databases in a clear and easy manner. A perfect introduction to database management. Covers the latest version of dBase IV & V for DOS and helps plan and set a database. Teaches how to use graphics; creating reports, form letters and mailing lists and find info through queries.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

dBase 5 for Windows For Dummies

Flexible and informative. The author's humorous approach and dBase expertise make the topics easy to grasp. Covers new dBase V for Windows and teaches its installation. Discusses planning & setting database; creating reports, form letters and mailing lists and using graphics.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

dBase 5 for Windows Programming For Dummies

Easiest way to start programming with dBase for Windows. Become an expert in visual programming, object-oriented, and event programming. Includes real-world examples of databases. Like order-entry systems, mailing lists, and scheduling info. Covers version 5.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

dBASE for Business Applications

An active learning approach. This book is aimed at users in the business environment of all types, who need to learn how to use dBase. The learning material is explained in such a fashion that it can be used as a self-instructional guide. The material used makes no assumptions about previous experience of either computing or business. The dBase skills and business applications are explained in simple terms.

Pages: 172 • Price: Rs. 75 • Postage: Rs. 8

DB2 (IBM Database)

The book starts from the very beginning and slowly builds the concepts of relational database management system, as it applies to DB2. The heavy-metal and hi-fi aspects of DB2 internal structures and performance tuning are also briefly covered.

Pages: 192 • Price: Rs. 199 (with Disk)
• Postage: Rs. 15

FoxPro 2.6 for Windows For Dummies

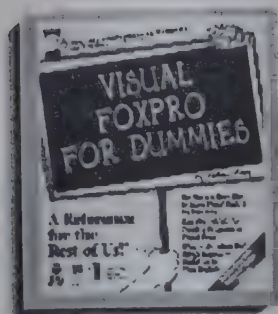
Learn all about database techniques in easy to learn and understand style. Covers features like catalogue manager, the screen builder, label writer and the new wizards. Provides real world answer that leads to solutions, an installation appendix and a cheat-sheet with commonly used field names, sizes and short-cuts.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

FoxPro 2.6 for Windows Application Development Handbook

A complete guide to database application development. Describes the new world of FoxPro 2.6 development. Explains how to use this powerful tool to create industrial strength multi-user and client/server FoxPro applications and utilities.

Pages: 450 • Price : Rs. 195 • Postage: Rs. 10

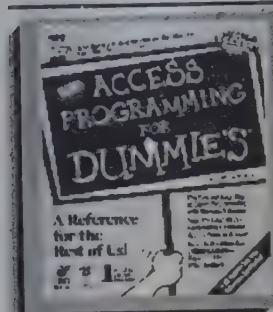


Dummies Press

Visual FoxPro For Dummies

This book shows users how to use FoxPro's many sophisticated client/server features, including support for remote views and connections, upsizing tools and new SQL commands. It takes users on an informative tour through the peculiar world of databases. It covers the object-oriented programming environment and gets "wanna be" programmers up to speed quickly.

Big size Pages: 400 • Price : Rs. 150 • Postage:

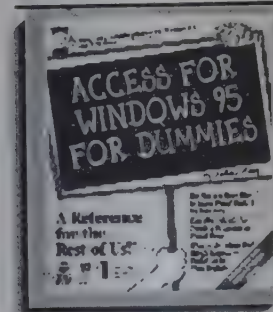


by Rob Krumm

Access Programming For Dummies

This is the ideal programming reference for Access users making the transition to database programming. Covers through version 2 Teaches building programs using Access Basics and saving time with fool-proof methods for testing code. Provides detailed discussion of SQL statements, expressions and Macros.

Pages: 350 • Price : Rs. 150 • Postage: Rs. 10

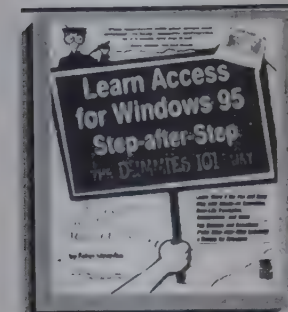


by John Kaufeld

Access for Windows 95 For Dummies

This book provides new programmers with information they really need to know to program using Access, including up-to-date information on Windows 95. It starts with the basics providing information in manageable parts so that users can start building custom programs right away.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

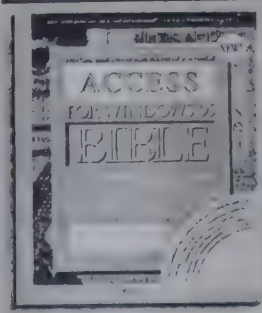


by M. L. Young & R. Lowe

Learn Access For Windows 95 Step-after-Step ...The Dummies 101 way

It takes the user through the basics of Access using progress checks. Also covers creating reports, running queries and developing tables. How to adapt existing reports and forms for new databases. Users will finally grasp macros and solve sticky Access problems on their own.

Pages: 250 • Price : Rs. 195 (with Disk) • Postage: Rs. 10

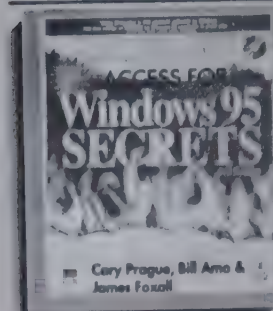


by Cary Prague

Access For Windows 95 Bible

Provides you with the best information and tools you need to harness the power of Access! Features expanded information for the advanced Access user, including an additional 200 pages that cover Access Basic programming. However readers at all skill level will find this book useful to reach higher skill levels, to master Access skills.

Pages: 1000 • Price : Rs. 425 (with Disk) • Postage: Rs. 15

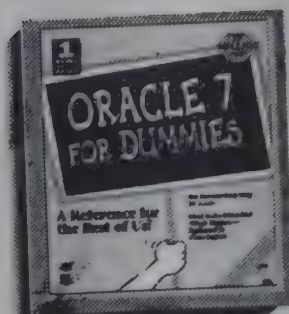


by Cary Prague, Bill Amo & James Foxall

Access For Windows 95 Secrets

Reveals secrets, tips, techniques, undocumented features and innovative ways to use Access for Windows 95 to its fullest. Geared to the intermediate to advanced Access user or developer. Focuses mainly on advanced and lesser known features of all versions of Microsoft Access and new features of Access 95.

Pages: 800 • Price : Rs. 325 (Book only), Rs. 450 (with CD) • Postage: Rs. 15

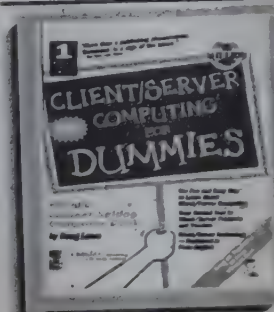


by Dummies Technology Press

Oracle 7 For Dummies

This friendly reference explains in detail how to create indexes and conduct complex queries. It provides excellent coverage on parallel query execution on SMP and MPP architecture, as well as showing administrators how to customize a database system to meet all their specific needs.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

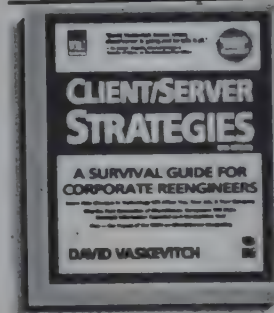


by Doug Lowe

Client Server Computing For Dummies

Fundamentals of this exciting technology are explained including client computers, graphical user interfaces and local area networks. It helps use client/server to exploit the power of all their computers while taking advantage of central storage and wide area access to data.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

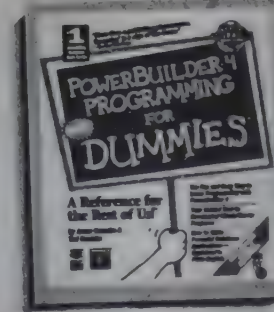


by Doug Lowe

Client Server Strategies (2nd Ed.)

An authoritative guide to learning how changes in technology will affect you, your job and your company. Shows today's corporate decision makers, business owners and technical professionals how the emerging technology will make their companies more competitive by empowering workers with the information needed to do their jobs faster and better.

Pages: 600 • Price : Rs. 245 • Postage: Rs. 10

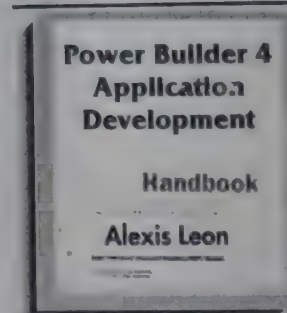


by T. Coombs & J. Coombs

Power Builder 4 Programming For Dummies

Incorporates the latest in object-oriented technology and covers the newest release of Power Builder. Explains everything about application development, from using the interface to making menus, windows and database to scripting with Power Builder's painter.

Pages: 400 • Price : Rs. 175 • Postage: Rs. 10

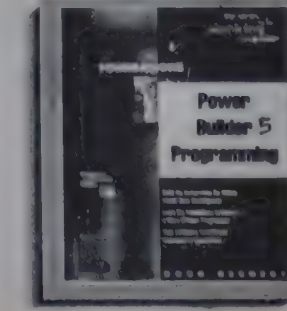


by Alexis Leon

Power Builder 4 Application Development Handbook

This comprehensive resource has all the insider information you've been looking for in a clear and easily digestible format. You'll find everything on Power Builder applications development to get you going immediately. More than just a book, this is a total development kit for creating strategic applications in Power Builder.

Pages: 500 • Price : Rs. 195 • Postage: Rs. 10

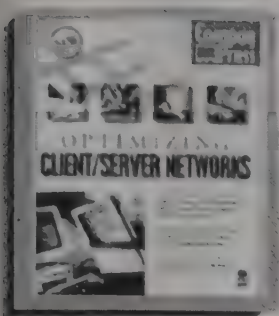


by Brian J. Smith

Foundations of PowerBuilder 5 Programming (Version 5)

Provides expert guidance and all the information tools one needs to build client/server database applications. Covers object oriented programming, event driven programming, client/server development and Windows development topics. Software on CD-ROM includes several tools and utilities.

Pages: 700 • Price : Rs. 325, Rs. 450 (with CD-ROM) • Postage: Rs. 15

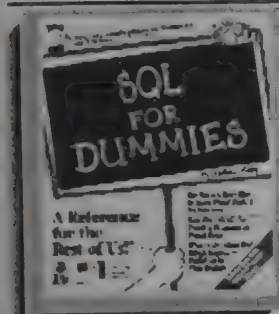


Optimizing Client/Server Network

This book by Compaq Computer Corporation provides everything you need to maximize the performance of your Client/Server networks. Discusses client-server requirements, platforms and standards, criteria for client server planning, implementation scenarios, problems, management and maintenance issues.

Pages: 500 • Price : Rs. 225 • Postage: Rs. 10

by Compaq Computer Corporation

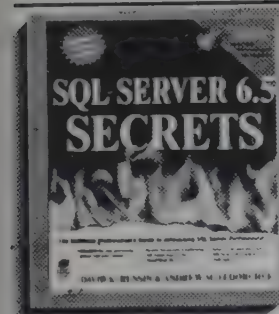


SQL For Dummies

This is your ultimate guide to learn relational database development, client/server architecture and basic and complicated SQL commands in a fun and easy way. Helps you create simple and multi-tabled databases, manipulate data, control functions and make complex retrieval calls. Provides techniques to optimize coding and maintenance.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

by Allen Taylor

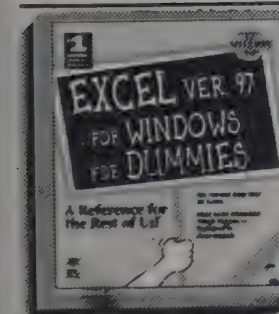


SQL Server 6.5 Secrets

A definitive guide to installing, administering and unleashing the power of Microsoft's complex client/server, relational database-management system. Experienced administrators and developers will find the feature summaries, tips, warnings, tutorials, workarounds and other practical advice they'll need to get up to speed fast with this major upgrade.

Pages: 800 • Price : Rs. 450 (with CD) • Postage: Rs. 15

by D. Rensin & A. Fedorchek

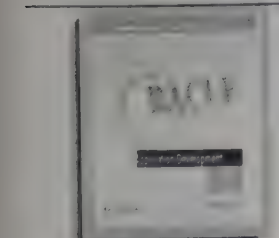


Excel Version 97 For Windows For Dummies

Gives a thorough coverage of the new version of Excel for Microsoft Office 97. It includes information on all the new features geared toward helping users build and format better worksheets and produce impressive charts. This book covers the Toolbar and helps users decide which tool is best for their job.

Pages: 704 • Price : Rs. 450 (with CD) • Postage: Rs. 15

by Dummies Technology Press

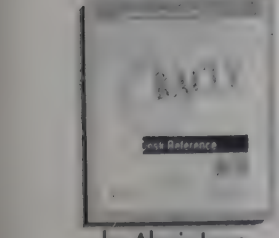


Oracle 7.0 Application Development Handbook

It gives you expert guidance and all the information you need to start developing applications in Oracle 7. This book is for users who want to get the most out of Oracle.

Pages: 450 • Price: Rs. 175 • Postage: Rs. 10

by Alexis Leon



Oracle 7.0 Desk Reference

It provides all the information you need at your fingertips to exploit Oracle 7 to the max! It guides the user through the essentials of Oracle and provides insights, tips and techniques, in a minimal amount of time.

Pages: 500 • Price: Rs. 150 • Postage: Rs. 10

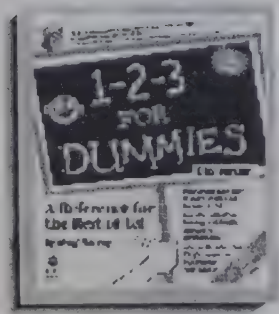
by Alexis Leon



Oracle 7.0 Developers Guide

This book is a definitive guide to Oracle development. Designed to get readers up-to-speed on the various features of Oracle. It covers SQL, SQL Forms, SQL Report Writer, SQL MENU and much more!

Pages: 225 • Price: Rs. 225 • Postage: Rs. 10

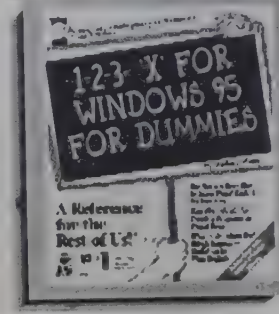


1-2-3 For Dummies

Simplifies Lotus 1-2-3 – the perfect introduction for the spreadsheet users. Covers version 2.0 and 2.4 with material applicable to version 3.x & 3.1. Learn building, editing and printing spreadsheets, creating and using Macros and tips & tricks that make you feel good.

Pages: 384 • Price : Rs. 95 • Postage: Rs. 8

by Greg Harvey

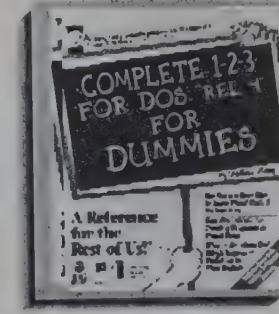


1-2-3 Ver. 97 for Windows 95 For Dummies

Describes all the new features of 1-2-3, including interface, icon bars, shortcut menus and drag and drop operations. It also covers the Lotus Notes connection, which makes it the ideal choice of workgroup environments. It covers the full range of fill-by-example, customizable worksheet tabs, interactive status bars and more.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

by John Walkenbach

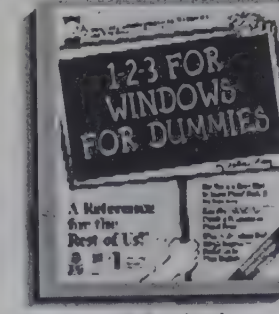


Complete 1-2-3 for DOS (Rel. 4) For Dummies

Explains how to use some advanced spreadsheets functions in 1-2-3 and includes worksheet design tips. Covers 2, 3 & 4. Describes effective and efficient features to master custom graphs, data sorting and advanced functions. Teaches how to use templates, macros, and provides information on 3-D versions of 1-2-3 worksheets.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

by John Weingarten

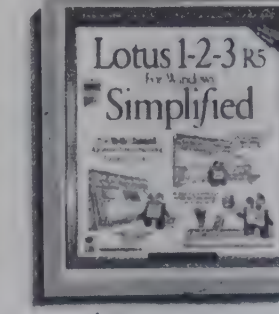


1-2-3 for Windows 5 For Dummies

Covers versions 4 & 5. Learn the basics of 1-2-3 for Windows with this easy to use book. Covers version 4 & 5. Teaches how to create your own professional looking spreadsheets in Windows and provides tips & tricks that make you feel good.

Pages: 384 • Price : Rs. 135 • Postage: Rs. 10

by John Walkenbach

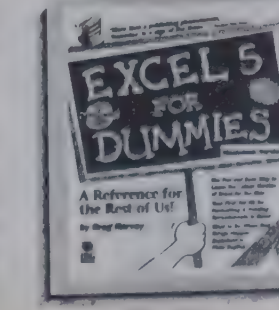


Lotus 1-2-3 Rel. 5 for Windows Simplified

Mastering Lotus 1-2-3 has never been easier. This book uses a breakthrough technology to teach beginners with a maximum number of pictures and a minimum amount of text.

Pages: 240 • Price : Rs. 150 • Postage: Rs. 10

by Ruth Maran



Excel 5 For Dummies

Explores how Windows 95 has affected Excel, making it a more powerful spreadsheet application. The new features and functions are explained in easy-to-read English. It details Excel's Chart, Function and tip wizard and discusses Excel's new development environment.

Pages: 368 • Price : Rs. 135 • Postage: Rs. 10

by Greg Harvey

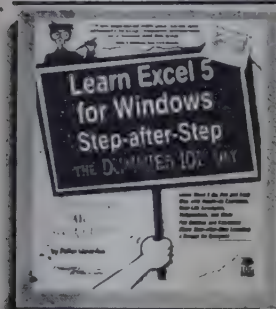


Excel 5 for Windows Simplified

Explains the most widely used Excel commands. Its visual simplicity disguises the in depth coverage of its contents. Each topic provides a step by step screen flow, showing every step in the process. All steps are visually and clearly connected to the area on the screen. An easy to follow index on every spread shows you where you are at all times.

by Ruth Maran

Pages 230 • Price : Rs. 150 • Postage: Rs. 10

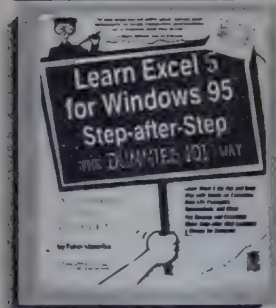


Learn Excel 5 for Windows Step-after-Step ...The Dummies 101 way

Users will get the instruction they need to actually learn how to use this spreadsheet. This book takes the user through the basics of Excel, using progress checks that help the user decide if he or she is ready to move on to the next task. It also covers formatting, creating slick graphs and adding graphics to worksheets

Pages: 250 • Price: Rs. 195 (with Disk)
• Postage: Rs. 10

by Greg Harvey

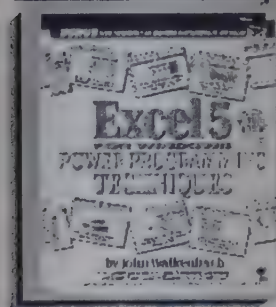


Learn Excel for Windows 95 Step-after-Step ...The Dummies 101 way

Users will get the instruction they need to actually learn how to use the spreadsheet. This book will take the user through the basics of Excel, using progress checks that help the user decide if he or she is ready to move on to the next task. Covers formatting, creating slick graphs and adding graphics to work-sheets.

Pages: 250 • Price: Rs. 195 (w/Disk)
• Postage: Rs. 10

by Greg Harvey

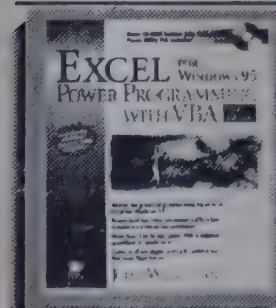


Excel 5 for Windows Power Programming Techniques

Develop Excel 5 applications for practical solutions to business problems with this technique oriented book. Mastering VBAs in Excel teaches you to advance into writing Macros for the multimedia of other Microsoft Products.

Pages: 750 • Price : Rs. 325 (w/Disk)
• Postage: Rs. 15

by John Walkenbach

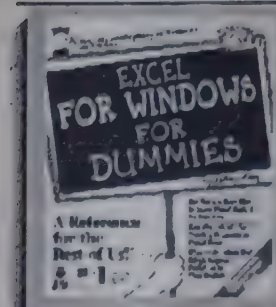


Excel for Windows 95 Power Programming with VBA (2nd Ed.)

It contains a thorough coverage of application development within Excel as well as extensive information about the popular visual basic for Application feature. Master Visual Basic for Application (VBA) programming fundamentals, subroutine procedures, function procedures, custom dialog boxes and more.

Pages: 800 • Price : Rs. 450 (with CD)
• Postage: Rs. 15

by John Walkenbach



Excel for Windows 95 For Dummies

This book explores how Windows 95 has affected Excel, making it a more powerful spreadsheet application. The new features and functions are explained in easy-to-read English. This book will save the user lots of valuable time by offering shortcuts for lot of Excel functions.

Pages: 400 • Price : Rs. 150 • Postage Rs: 10

by Greg Harvey

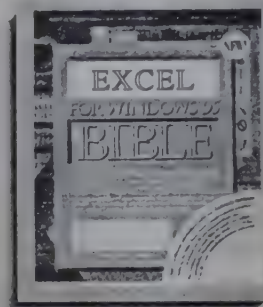


Excel For Windows 95 Simplified

This guide teaches you how to use all of the exciting and powerful features of the world's number one spreadsheet program for Microsoft Windows. Excel for Windows 95 Simplified addresses issues for total beginners, yet demystifies even extremely technically and complex issues.

Pages • Price : Rs. 150 • Postage: Rs. 10

by Ruth Maran

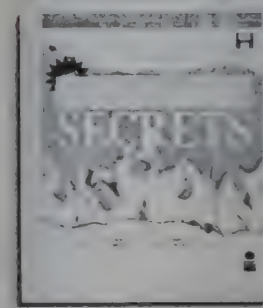


Excel For Windows 95 Bible

Get more power and productivity than ever before from your spreadsheets. If you want to turn data into impressive 3-D charts? Swap huge files with your colleagues? Do you dare test your computer's memory and open 5 worksheets at the same time? Master all these features and more with this book.

Pages 1000 • Price : Rs. 325 (Book only),
Rs. 395 (w/Disk) & Rs. 450 (with CD-ROM)
• Postage: Rs. 15

by John Walkenbach

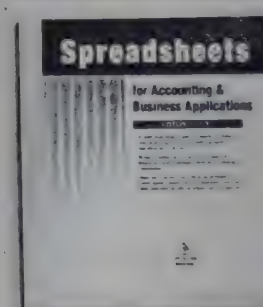


Excel for Windows 95 Secrets

Get expert advice for maximizing the power of Excel for Windows 95 in this hot secrets title. Learn how to supercharge the powerful database and report generating functions, create custom utilities and master the popular Visual Basic for Applications. The CD ROM includes a comprehensive collection of useful utilities and new worksheet functions.

Pages: 900 • Price : Rs. 325 (book only), Rs. 395 (w/Disk) & Rs. 450 (with CD) • Postage: Rs. 15

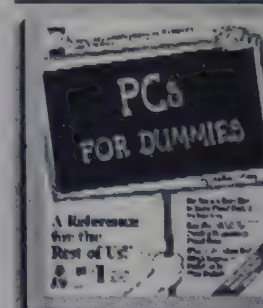
by Pat Burns



Spreadsheets for Accounting & Business Applications

Explains how to use advanced spreadsheet functions with special focus on accounting and business applications. Contains a tips and tricks galore, including shortcuts and troubleshooting information.

Pages: 250 • Price: Rs. 110 • Postage: Rs. 10

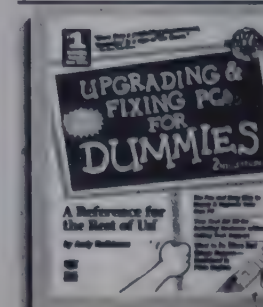


PCs For Dummies (3rd Edition)

The layman's guide to PC configuration, upgrading and repair. With useful tips. Describes system setup, using disk drives, monitor, printer & peripherals. Discusses what to try before going to repair shop, how to get help and provides a glossary of computer terms.

Pages: 400 • Price : Rs. 120 • Postage: Rs. 10

by Dan Gookin and Andy Rathbone

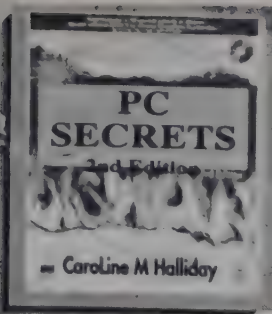


Upgrading & Fixing PCs For Dummies (2nd Edition)

Describe turning a 386 into 486, upgrading your computer to run Windows 95 and discusses what's easy and hard to upgrade. Teaches adding new video card, hard disk, and memory chips and figuring out what's broken and how to fix it.

Pages: 356 • Price : Rs. 135 • Postage: Rs. 10

by Andy Rathbone

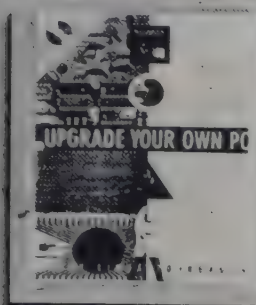


by Caroline M Halliday

PC Secrets (2nd Edition)

This book provides expert advice for understanding and optimising your PC without a lot of headaches. Covers microprocessors, memory, keyboards, cases, power supplies and adapter boards. Discusses multimedia and CD-ROM capabilities, on-line services, Windows 95 and OS/2 Warp.

Pages: 800 • Price : Rs. 395 (with 2 disk)
• Postage: Rs. 15

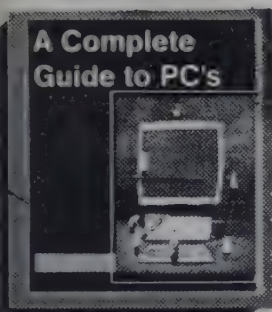


by Linda Rohrbough

Upgrade Your Own PC

The book's goal is to explain the principles of diagnosing PC problems by presenting specific examples and specific solutions. It brings a wholistic approach to upgrading that doesn't ignore the software and operating system aspects. Further, the business aspects of upgrading can be demonstrated in the case studies as well as in money saving tips, shortcuts and ideas interspersed throughout the text.

Pages: 400 • Price : Rs. 175 • Postage: Rs. 10

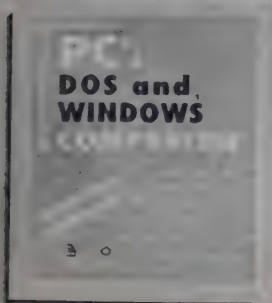


by Jim Muir

A Complete Guide to PC's

Creates awareness about modern computer Hardware & Software and how these can serve as productivity aids. Imparts working knowledge of Computer Software and how these can serve as productivity aids. Imparts working knowledge of computer Software packages like WordStar to senior executives and helps organizations to assess the operations that require computers

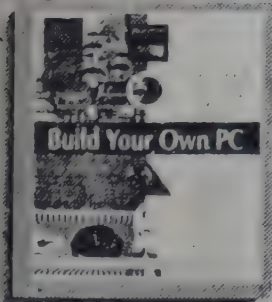
Pages: 224 • Price : Rs. 60 • Postage: Rs. 8



PC's DOS & Windows Companion

A complete guide to understand the working of PC's and the DOS and Windows operating system. Features valuable techniques for the person venturing into the world of computer for the first time.

Pages: 384 • Price : Rs. 110 • Postage: Rs. 8

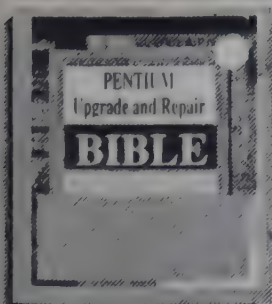


by Amrit Bir Tiwana

Build Your Own PC

Once you have gone through this book you will be able to assemble your own 486 / Pentium PC. The author does not assume special hardware or software expertise on the part of the reader. Find all the software and hardware details required for installing the system and keep it running in top condition.

Pages: 300 • Price : Rs. 75 • Postage: Rs. 8

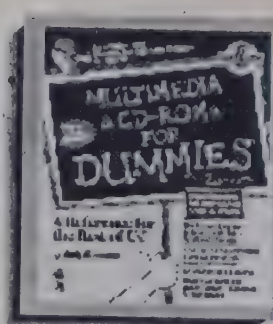


by Amrit Bir Tiwana

Pentium Upgrade and Repair Bible

For those who want to keep their PC's state of the art and working efficiently and trouble free. It covers software and hardware upgrades, structure of the 486 and Pentium motherboards, installation and using input/output devices like laser printers and other multimedia tools.

Pages: 500 • Price : Rs. 245 (with Disk)
• Postage: Rs. 10

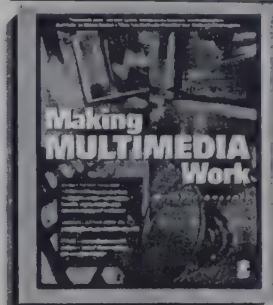


by Andy Rathbone

Multimedia & CD-ROMs For Dummies (2nd Edition)

Explains the complex world of multimedia to beginners with tips on Hardware, Software and Total Integration. Advices on sound cards, peripheral solutions and using multimedia software with Windows, OS/2 and the Mac. Describes how to set a simple MIDI studio or make a movie on PC.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 8

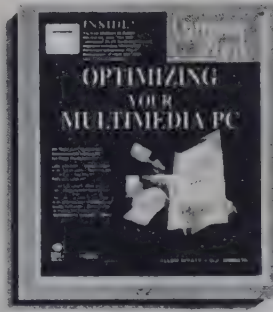


by Michael Goodwin

Making Multimedia Work

Whether you're upgrading your system or going all-out with a no-holds barred super system, read this book before you go any further. Find expert tips for setting up your multimedia system, choose the best CD ROM drive for your needs, how to tap into the awesome multimedia features in Windows 95, strategies to improve choppy "full motion video" and much much more.

Pages: 328 • Price : Rs. 150 • Postage: Rs. 10

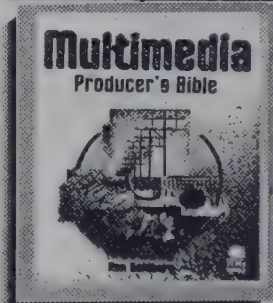


by L.J. Skibee, Susan Hafemeister and Ange La M. Chesnut

Optimizing Your Multimedia PC

This book optimizes peak performance and grace of your multimedia PC by generating smoother video, richer audio and faster load times. Covers the latest audio and visual options to maximize performance of your existing system and helps deciding when to upgrade.

Pages: 500 • Price : Rs. 245 (without CD-ROM)
Rs. 350 (with CD-ROM) • Postage: Rs. 10



by Ron Goldberg

Multimedia Producer's Bible

Master the magic of multimedia from basic elements to fabulous finished product. The book maps the entire process of multimedia. It discusses the appropriate tools to use for various projects and legal issues. Uncovers the hidden secrets of multimedia design and production that only the experts know. Shows how to create content that can go anywhere - on a CD or on a Web site.

Big size Pages: 1000 (In Press)

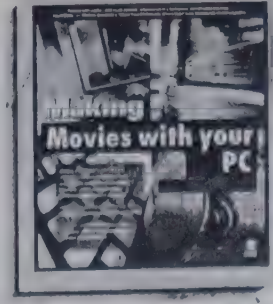


by Deke McClelland

Photoshop For Windows 95 Bible

This is the ultimate hands-on reference for artists, designers and anyone who works with today's leading image editing software. Covers everything from Photoshop fundamentals to extensive coverage of advanced features and techniques.

Pages: 900 • Price : Rs. 450 (with CD)
• Postage: Rs. 15

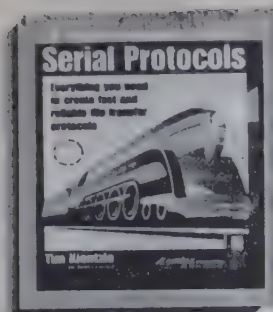


by Robert Hone & Margy Kuntz

Making Movies With Your PC

Discover the cinematic elements exploited by filmmakers from Chaplin to Spielberg to create your own effective professional multimedia presentations at home! Explains the workings of digital video and how you can use this powerful technology to create your own digital movies.

Pages: 458 • Price : Rs. 295 • Postage: Rs. 15

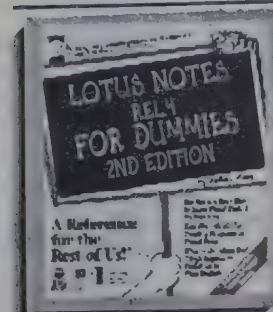


by Tim Kientzie

Working Programmer's Guide to Serial Protocols

A one-stop source for C/C++ programmers who want to create fast serial file transfer protocols. Provides key information and source code for all major serial protocols and shows you how to customize and create hybrid protocols for more efficient, data communications.

Pages: 500 • Price : Rs. 295 (with disk)
• Postage: Rs. 15

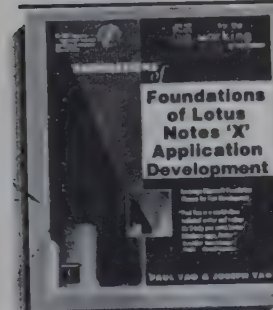


by Londergan Freeland

Lotus Notes (Rel. 4) For Dummies (2nd Edition)

A friendly and accessible reference to make you feel like a techno-genius, even if you are not. Find out how to use electronic mail to increase communication, discover tips for making a smooth transition from CC:mail to Lotus Notes. Tap into the Internet with the Notes Web Navigator. Share spreadsheets and documents for efficiency.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

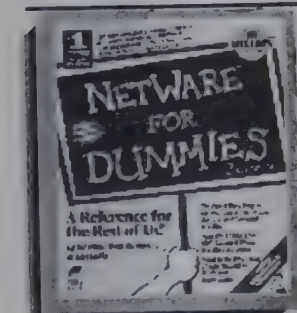


by Kerwin Blanning

Foundations of Lotus Notes 4 Application Development

It's an authoritative source for developers and network administrators. Topics include the development process, cross platform design, creating a Notes database, security, real-world design, integrating Notes with other applications, optimizing performance, maintain database, and much more.

Pages: 800 • Price : Rs. 450 (w/CD)
• Postage: Rs. 15

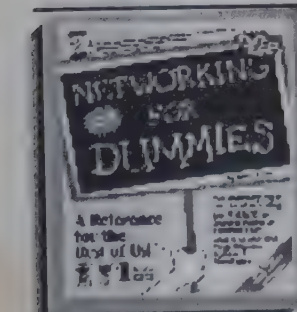


by Ed Tittel, Deni Connor and Earl Follis

NetWare For Dummies (2nd Ed.)

Simple, straightforward reference full of tips on installation & management. Teaches you how to set up and navigate a NetWare network. Helps the user learn the fundamentals and explains cards, cables, and common networking tasks in everyday language. Covers ver. 2.x, 3.x, 4.x.

Pages: 420 • Price : Rs. 135 • Postage: Rs. 10

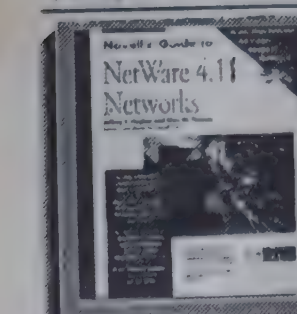


by Doug Lowe

Networking For Dummies (2nd Ed.)

If you need to set up a network at the office but aren't sure what a network is, this book gives you all the help you need! It explains everything you need to know to select, set up, use and manage a computer network in a non intimidating way that anyone can understand - even if you don't have a computer science degree!

Pages: 352 • Price : Rs. 150 • Postage: Rs. 10

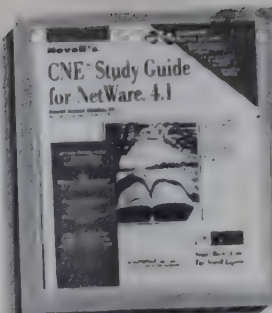


by J. F. Hughes & B. W. Thomas

Novell's Guide to NetWare 4.11 Networks

An ideal companion for the design, installation and migration to NetWare 4.11 Network. With a focus on design techniques, expert authors take the NetWare network administrator straight to the crux of the NetWare network - Novell Directory Services (NDS). The authors explore NDS and NetWare 4.11 features more accurately and more thoroughly.

Pages: 800 • Price : Rs. 695 (with disk) • Postage: Rs. 15

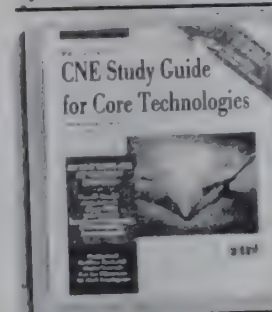


by David James Clarke, IV

Novell's CNE Study Guide for Netware 4.1

Covers everyone of Netware 4.1 requirement for the CNE credential. Suitable for new CNE's as well as upgraders from Netware 3-X. Provides complete coverage of Netware directory structure security issues, utilities, CNE system-management responsibilities, printing and performance optimization.

Pages: 1600 • Price : Rs. 595 (without CD-ROM)
Rs. 795 (with CD-ROM) • Postage: Rs. 15

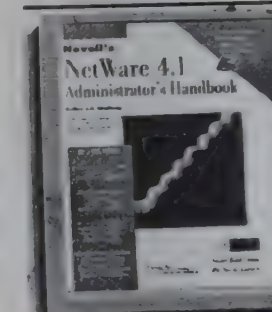


by David James Clarke, IV

Novell's CNE Study Guide for Core Technologies

A meticulous coverage for the two non network-specific courses, that are required for the CNE (Certified Novel Engineer): Service and Support and Networking technologies sections of the CNE examination. Its surveys each critical points students will encounter with informative real-world cases, sampled test questions, etc.

Pages: 1000 • Price: Rs. 495, 695 (with CD)
• Postage: Rs. 15

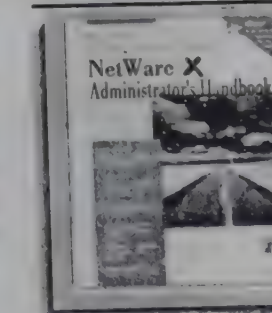


by Kelly J. P. Undberg

Novell's Netware 4.1 Administrator Handbook

This provides Novell administrators every latest detail from configuration to disaster recovery. Installing fileserver, workstations, on-line documentation, printing services. Provides tips on monitoring the server, securing the network and explains login scripts and menu programs for automating your users environment.

Pages: 400 • Price : Rs. 395 (with disk)
• Postage: Rs. 15

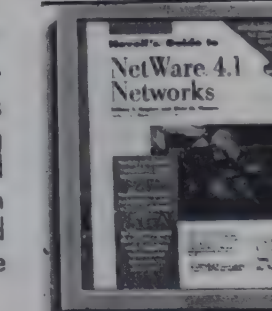


by Kelley J.P. Lindberg

Novell's Netware X Administrator's Handbook

This book presents all the necessary information they need in a quickly accessible format. With the release of NetWare X, many administrators will be in dire need of a working knowledge of NetWare X. Provides detailed coverage of each NetWare X feature, without going into more detail than necessary for the network administrator on the fly.

Giant size Pages: 800 • (In Press)

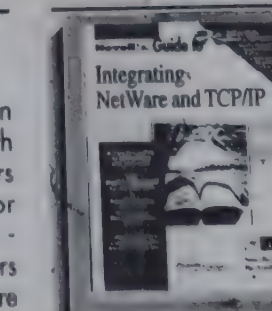


by J. F. Hughes & B. W. Thomas

Novell's Guide to Netware 4.1 Networks

Learn and refine practical techniques for successfully building and troubleshooting Netware 4 networks of any size. Explains crucial NDS concepts such as tree design, including partitioning, replication and time synchronization; tree walking; etc.

Price : Rs. 695 (with CD-ROM)
• Rs. 450 (Book only) • Postage: Rs. 15

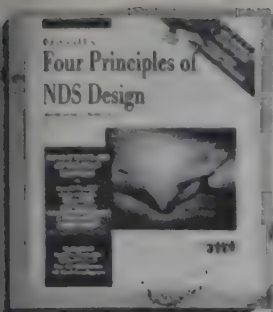


by Drew Heywood

Novell's Guide to Integrating NetWare and TCP/IP

A complete guide to TCP/IP in the Novel Network environment. to make TCP/IP accessible to the broadest possible spectrum of NetWare administrators. TCP/IP is the hottest set of protocols available.

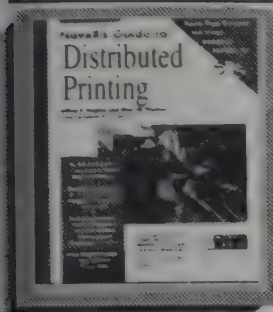
Pages: 600 • Price : Rs. 325, 495 (with CD)
Postage: Rs. 15



Novell's Four Principles of NDS Design

This book focuses on the four major principles of designing NetWare Directory Service (NDS). By understanding the four major principles of designing NDS, the readers will not only be able to design NDS trees but also have the assurance that they are using Novell's rules and recommendations.

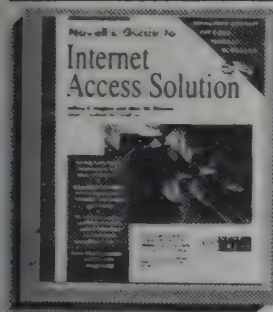
by Jeff Hughes and Blair Thomas Big size Pages: 350 • (In Press)



Novell's Guide To Distributed Printing

NDPS (NetWare Distributed Printing Services) Novell's new network based distributed printing system sets the standard for robust, reliable, scalable printing through single-source administration. With NDPS, the network can redirect your printing job to an available printer, a printer with special features, or to a printer with the right resources available.

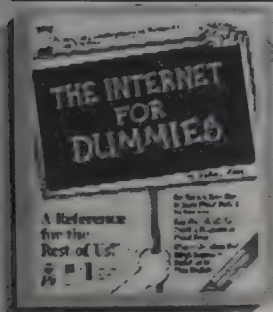
by Scott A. Isaacson, Roy F. Studyvin, Craig T. Whittle (in press)



Novell's Guide to Internet Access Solutions

This book aims to help NetWare network administrators provide Internet, Web and Internet access without requiring each user to have a dedicated modem and phone line. Provides explanation of both client and server solutions and step-by-step implementation and troubleshooting guide to each solution.

by Spicer, Chappel and Dixon Big size Pages: 400 • (In Press)

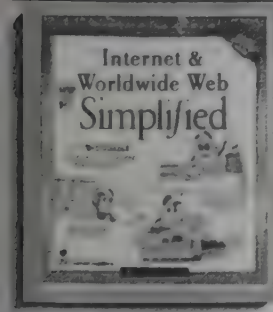


The Internet For Dummies (3rd Ed.)

Vital Reference for all new users in order to understand the complexities of the rapidly expanding Internet. Provides basics of Email, mailing lists, network news and an updated list of available public Internet service products. Discusses ten common problems and how to avoid them.

Pages: 500 • Price : Rs. 150 • Postage: Rs. 10

by John R. Levine and Carol Baroudi

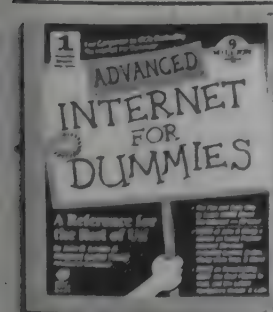


Internet & Worldwide Web Simplified

This unique, fully illustrated guide shows how the whole worldwide Network fits together – and how you can plug into it. It covers TCP/IP, Freenets, SLIP/PPP, WAIS, Vernoica, Usenet, WHOIS, Finger, Chatting, IRC, MUDs, Telnet and much more.

Pages: 220 • Price : Rs. 150 • Postage: Rs. 10

by Ruth Maran

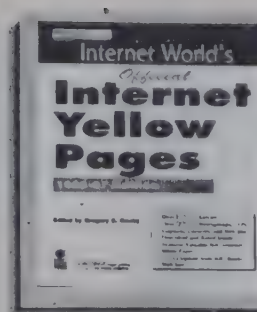


Advanced Internet For Dummies

Vital Reference for all new users in order to understand the complexities of the rapidly expanding Internet. Discusses where to go and what to do once you get connected. Provides great Internet tips and secrets.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

by John R. Levine and Margaret Levine Young

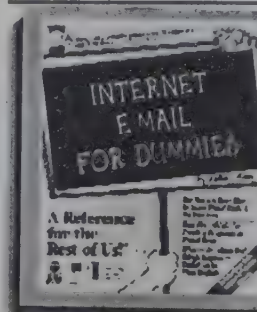


Internet World's Official Internet Yellow Pages (96-97 Ed.)

The ultimate Internet Yellow Pages, as expansive as the Net itself, the Internet World's Official Internet Yellow pages is the readers' one-stop Net resource. Features FTP sites which are used for retrieving software from a remote site for downloading to your computer; mailing lists which use E-mail technology.

Pages: 800 • Price : Rs. 450 (with Disk) • Postage: Rs. 15

by Gregory B Newby

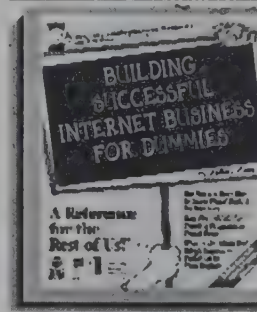


Internet E-Mail For Dummies

A painless introduction to Internet E-Mail procedures. Packed with useful information on composing, sending and sorting Internet E-Mail messages. Covers E-mail concepts, etiquette and staying connected via E-mail when you are on the road. Filled with tips on group scheduling, electronic forms routing, process automation, document sharing and much more.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

by John R Levine, Carol Baroudi & Arnold Reinhold

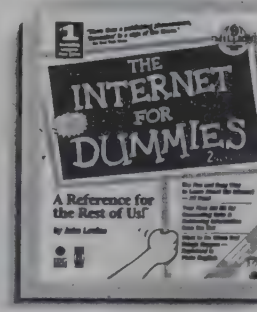


Building Successful Internet Business For Dummies

Starting with an overview of important Internet basics, it goes on to help the user identify business goals. Explores options with which a user can establish a business presence on the Internet. It gives advice on how to get the most out of the newest and hottest marketing medium in cyberspace.

Pages: 450 • Price : Rs. 150 • Postage: Rs. 10

Dummies Press

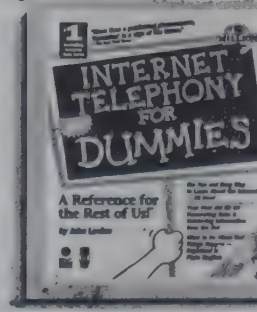


Intranets For Dummies

It discusses how to establish, maintain and use an intranet effectively - making your business more profitable. It covers in-depth information on making the most of your intranet Web site for sharing basic information such as publishing job listings, benefits information, internal phone directories and more.

Pages: 384 • Price : Rs. 150 • Postage: Rs. 10

by Dummies Technology Press

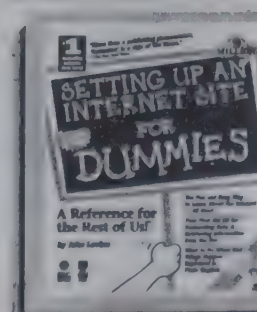


Internet Telephony For Dummies

Intranet telephony involves the use of the Internet along with telephones, fax machines, videotelephones, videoconferencing, audioconferencing and every other conference users can think of. After finishing this book you will know how to use the Internet to speak, fax and meet with other people and in doing so, be on the leading edge of truly worldwide revolution in telephony.

Pages: 384 • Price : Rs. 150 • Postage: Rs. 10

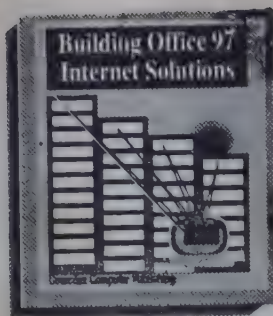
by Daniel Briere & Patrick Hurley



Setting Up An Internet Site For Dummies

Beginning with the basics of setting up an Internet site, including coverage of domain names, URL syntax and client/server Internet software. It also talks about using commercial services to establish an Internet presence. Covering all components of maintaining an Internet site by offering advice using FTP, setting up a secure environment for on-line sales, etc.

J. Coombus & Tod Coombus Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

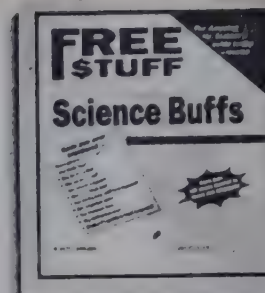


IDG Press

Building Office 97 Intranet Solutions

Using Intranet technologies is quickly becoming the popular means of solving internal communication problems for companies of every size. And this book is an essential guide to help working professionals learn the skills necessary to build and share data on the Internet that will be of immediate benefit to their business.

(In Press)

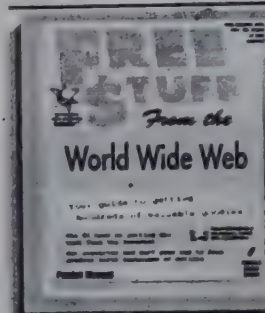


by Patric Vincent

Free Stuff from the Internet for Science Buffs (2nd Edition)

This book will answer all your science questions and provide you with an amazing collection of free stuff to help you satisfy your craving for science. Covers a variety of topics including Machines, Device and Gadgets; Human, Animals, Fish and Plants; Planet, Earth, imponderable issues and more.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10



by Patric Vincent

Free Stuff from the World Wide Web

Free Stuff from the World Wide Web reveals the secrets of exploring the World Wide Web by showing you how to get thousands of dollars worth of treasure - catalogs, coupons, product samples, newsletters, software, photos, art, video clips, music, desktop publishing goodies and more for your business, home, family, or just for fun - all for FREE!

Pages: 400 • Price : Rs. 175 • Postage: Rs. 10



by N. Borwankar & D. Elderbrock

Building Successful Internet Businesses

It tells how to start a new business on the Net and how to design it for the special medium. Provides direction on customer service, technical aspects, business models and more. Case studies and analysis of the most successful and cutting-edge Internet businesses give the reader essential business and marketing techniques.

Pages: 400 • Price : Rs. 225 (book only)
Rs. 350 (with CD) • Postage: Rs. 10

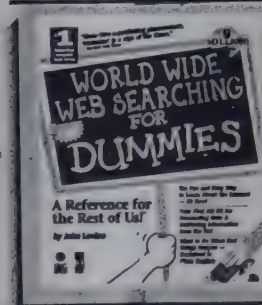


by John R. Levine & Carol Baroudi

Internet Secrets

The key to become a power Internet user, packed with expert tips from the hottest Internet authors on performance enhancement, power strategies. It offers an inside look at the Internet, from the people you'll find on it to the down and dirty details of the programs that bring its resources to you.

Pages: 988 • Price : Rs. 395 (with Disk)
• Postage: Rs. 15

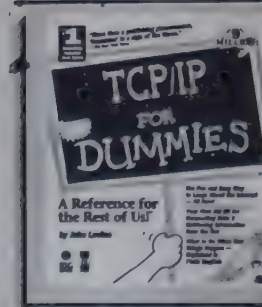


by Dummies Press

World Wide Web Searching For Dummies

The book focuses on educating readers with the fundamentals needed to learn and understand organized searches through the whole of Web space. In addition to the variety of searching tools available, learn how to tap directly into the Internet or dial into a service that supports Internet access.

Pages: 384 • Price : Rs. 150 • Postage: Rs. 15

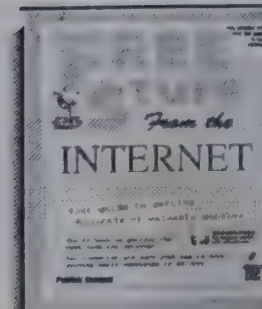


by M. Wilensky & C. Leiden

TCP/IP For Dummies

Covers protocols for networks connected to the Internet as well as disconnected networks. Shows how to take advantage of IP in all situations. Covers bridges, routers, gateways as well as routing policy. Discusses important networking concepts, rules for all communications over the Internet and how to handle data corruption and bad packets.

Pages: 400 • Price : Rs. 175 • Postage: Rs. 10



by Patric Vincent

Free Stuff from the Internet

Readers can maximise their gains from the use of Internet. The book helps the users with fast and easy access to Internet with Mosaic.

One gets aware of the What and How of getting free products, software games and much more. The book discusses WebWare for Windows, Macintosh and UNIX in plain English.

Pages: 400 • Price : Rs. 195 • Postage: Rs. 10

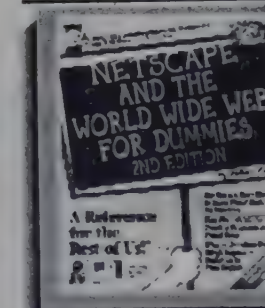


by Ruth Maran

Netscape 2 Simplified

This visual approach to learning is so effective that even complete novices can feel at ease with Netscape in no time at all. The book covers all the standard features of Netscape as well as new enhancements: integrated and secure electronic mail, state-of-the-art navigation capabilities, live on-line applications including Java support, a built-in multimedia player for Macromedia Director and much more.

Pages: 250 • Price : Rs. 150 • Postage: Rs. 10

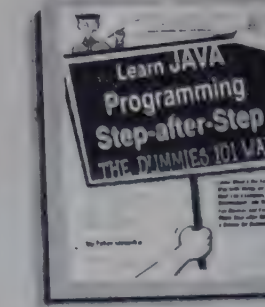


Dummies Press

Netscape and the WWW For Dummies (2nd Edition)

This updated 2nd edition is bursting with tips on cruising the Web and using Netscape to find information, sports stats, chat with others, download files and much more. It contains all new information on the latest version of Netscape including document updating, improved browsing of UseNet newsgroups and support for formatted HTML 2 & 3.0 Hypermedia.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

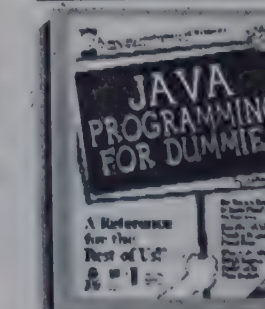


by Dummies Press

Learn Java Programming Step-after-Step the ...Dummies 101 way

Java language is hot! hot! hot! and developers want to take advantage of all the new capabilities offered by Java. Teaches you in a step by-step ways to create Java enhanced Web pages like animation, games & other interactive content. Starting from the beginning by describing how to download Java from the Internet

Pages: 384 • (In Press)

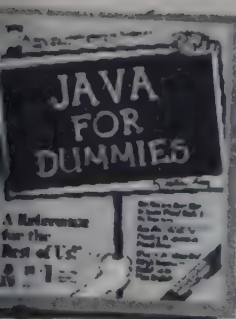


by Dummies Press

Java Programming For Dummies

This book describes how to create Java enhanced web pages by including animation, games, and other interactive content. It starts at the beginning by describing how to download Java from the Internet along with easy to follow configuration instructions. Java not only helps developers create enhanced web pages, but is a general purpose language for stand alone non Internet programming.

Pages: 400 • Price : Rs. 150, Rs. 295 (with CD)
• Postage: Rs. 10/

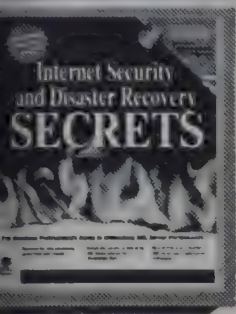


Dummies Press

Java For Dummies

This book gives users an overview of the Java applets, and in the process, they find out the Web, Hot Java, Netscape's Java, Microsoft's impending Java implementation and more. It takes the user step-by-step through installing, using, and mastering the most current release of the Hot Java and Netscape Navigator browsers, as well as learning the jargon.

Pages: 400 • Price : Rs. 150, Rs. 295 (w/CD) • Postage: Rs. 10



John Vacca

Intranet Security and Disaster Recovery Secrets

Intranet security and disaster recovery is a vital concern to a company's future. With the threat of natural disasters, hackers, viruses and a host of unresolved problems associated with disaster recovery are intensifying. This book provides an assessment of the capabilities of an enterprise's resources to implement an effective Intranet security strategy.

(in Press)



Dan Parks Sydow

Jumping To Java: Fast Track For C and C++ Programmers

This is the only book on Java that tells C and C++ programmers what they need to migrate to the hot new Java programming environment. Java is the hottest thing in programming today because of its immediate acceptance for Web development and its growing adoption for platform independent desktop applications.

Pages: 564 • (In Press)



Aaron E Walsh

Foundations of Java Programming for the WWW

Transcend the earthly bounds of HTML and first-generation browser technology with Java, and unleash a powerful new dimension of sight, sound and interactivity to the Web! Use this comprehensive resource to dive head first into Java's platform independent programming environment and to gain hands-on practice.

Pages: 800 • Price: Rs. 450 (with CD) • Postage: Rs. 15



Paul J. Perry

Creating Cool Web Applets with Java

Turn your static Web pages into powerful interactive communication tools when you use the Java tips and techniques in this hands-on guide. It shows you step-by-step how to transform dull, lifeless images into dynamic and exciting interactive presentations that will impress and inform potentially millions of surfers in the WWW!

Pages: 350 • Price: Rs. 350 (with CD-ROM) • Postage: Rs. 15

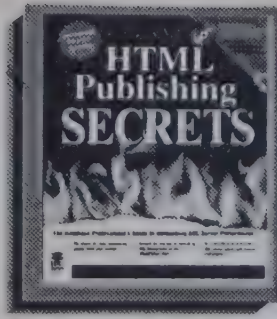


Ed Tittel, Don Parsons & James Michael Stewart

Intranet Bible

In one volume this book gives you every thing you need to know to design, implement and manage a company Intranet. Enriched with tips, productivity enhancing ideas, techniques and ready-to-use solutions from the most successful sites in operation today. This book answers the need for a clearly written comprehensive guide to building internal business applications.

Big size Pages: 736 • (In press)

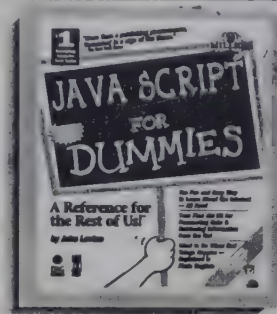


by Jim Heid

HTML Publishing Secrets

Stay productive and creative with the ultimate insider's guide to Web publishing for Mac and Windows Web developers. People who do Web development work with the intensity of programmers must have creative drive as well. They're very highly motivated to improve their skills and efficiency due to competitive PR and deadline woes.

Pages: 600 • Price : Rs. 450 (with CD) • Postage: Rs. 15

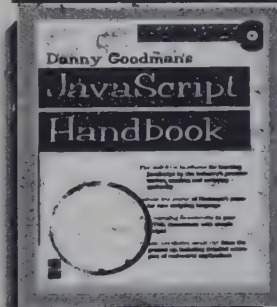


by Dummies Technology Press

JavaScript For Dummies

Practical guide for would-be Web page builders who want to use JavaScript to create dynamic Web pages. The book starts by providing the users an understanding of what JavaScript is and how it can be used. So those who want to create works of art on their Web pages will love a book that offers the information in a fun, understandable manner.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

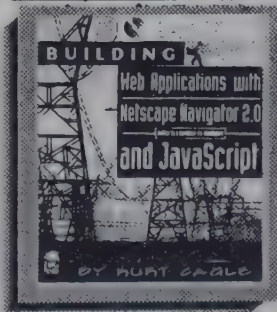


by Danny Goodman

Danny Goodman's JavaScript Handbook

Learn how to make your pages so inviting, users will spend more time at your Web site and come back for more. Understand JavaScript concepts with in-depth explanations of scores of complete HTML document listings. Learn the JavaScript in clearly labeled sections of beginner, intermediate and advanced terminology.

Pages: 550 • Price : 295 (book only) Rs. 450 (with CD) • Postage: Rs. 15



by Kurt Cagle

Building Web Applications With Netscape Navigator 2.1 and JavaScript

These days developers will need to turbo charge their Web sites with the power of Netscape navigator 2.1 and JavaScript. This book is all developers need to learn how to put Netscape 2.1 and JavaScript to work for their most pressing Web projects.

Pages: 656 • Price : Rs. 450 (with CD) • Postage: Rs. 15

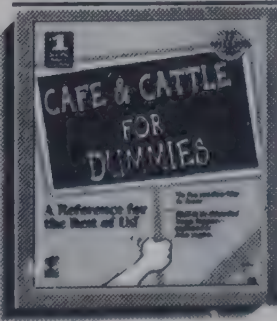


by Ron Wodaski

Creating Cool Web Pages With Netscape Gold and Javascript

An amazing collection of tutorials and powerful, custom tools that enable the reader to create a cool web page in minutes - even if you know nothing about HTML or the Web. Netscape Gold is a tool for Web-page creation and JavaScript is a scripting language that can enhance Web pages.

Pages: 350 • Price : Rs. 350 (with CD) • Postage: Rs. 15

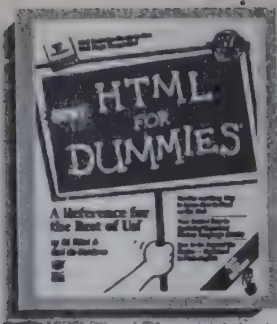


by Dummies Press

Cafe Programming For Dummies / Latte Programming For Dummies

Geared for both professional developers and the growing group of Java developers, who include graphics artists and others interested in creating interactive programs and embedding them into Web pages on the Internet. Second book provides a complete overview of Borland's Latte, a highly productive Java programming environment for development projects.

Price : Rs. 150 each • Postage: Rs. 10 each

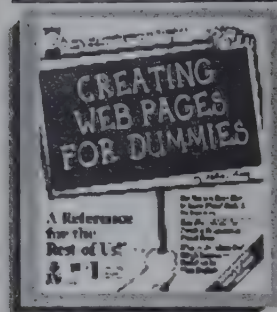


by Ed Tittel & Steve James

HTML For Dummies (2nd Ed.)

Good Web pages will successfully establish a Net presence for users. This book starts at the beginning giving them an overview of how to create a Web page, what to put on it, and how to maintain it. Contains a complete overview of the Web's publication process from design to maintenance.

Pages: 450 • Price: Rs. 225 (with Disk)
• Postage: Rs. 15

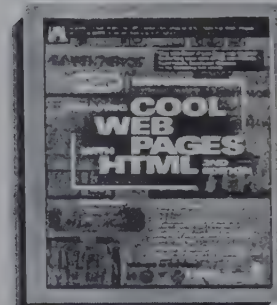


by Bud Smith & Arthur Bebak

Creating Web Pages For Dummies

This book cuts through jargon and complexity and describes simply how to create and publish attractive, Web pages. This unique approach helps the reader decide what to do before getting committed to a Web page. It covers do's and don'ts of publishing. The focus here is on creating and publishing Web pages quickly and easily. It requires no knowledge of HTML.

Pages: 400 • Price: Rs. 150 • Rs. 299 (with CD)
• Postage: Rs. 10

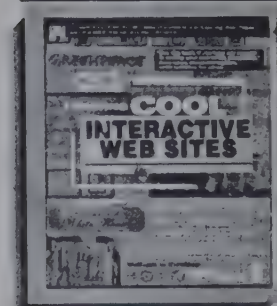


by Paul J. Perry

Creating Cool Web Pages With HTML & CGI

This is the fun, friendly, and informative guide to creating dynamic home pages for the WWW. It goes well beyond other HTML books by covering such topics as good design techniques, international characters, the future of HTML, and where to publish your Web pages.

Big size Pages: 400 • Price: Rs. 195 (with Disk)
• Postage: Rs. 10



by Paul M. Summitt & Marry J. Summitt

Creating Cool Interactive Web Sites

This 'Creating Cool' title won't bog you down with history, theory or other boring stuff you'll never use again. Instead, Web gurus Paul and Marry Summitt take a hands-on "get it done" approach and walk you through every step of the process.

Pages: 450 • Price: Rs. 350 (with CD)
• Postage: Rs. 15



by Jerry Muelver

Creating Cool Web Pages with Perl

People need to have their Web pages stand out from the crowd. With Perl, any Web page builder can create more dynamic and interactive Web pages. This book shows how to add the power of Perl scripts to make pages come alive with interactive forms, using files to track information, registering visitors, counters and more.

Pages: 350 • Price: Rs. • Postage: Rs. 15



by Ed Tittel

Foundations Of WWW Programming with HTML & CGI

Find everything you need to build better Web pages and how to make Web pages interactive and dynamic. Features the tools needed to create high-quality, interactive Web pages, including an overview of the Common Gateway Interface (CGI) to make Web pages interactive and dynamic.

Pages: 800 • Price: Rs. 395 (book only), Rs. 450 (with CD) • Postage: Rs. 15

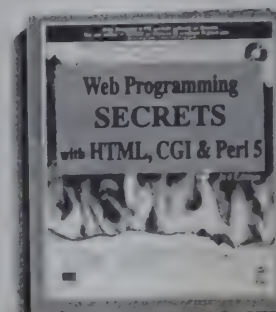


by Ed Tittel, Mark Gaither, Sebastian Hassinger & Mike Erwin

WWW Secrets with HTML & CGI

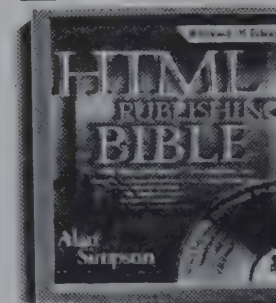
It takes readers on a personal tour of the World Wide Web. It explains the potential of the Web, tells you how to get connected and recommends which software to use to optimally surf the Web. The book includes complete coverage of publishing home pages on the WWW.

Pages: 800 • Price: Rs. 295 (book only),
Rs. 450 (with CD) • Postage: Rs. 15

**Web Programming Secrets With HTML, CGI and Perl 5**

The book divided into two parts, the part one provides all the hints, techniques and secrets for doing CGI programming, building HTML and CGI generators, testing and installing Web applications. Part two expands on the techniques by building and introducing a new tool in each chapter, full featured programs for the people using their sites.

Pages: 800 • Price: Rs. 395 (w/Disk) • Postage: Rs. 15

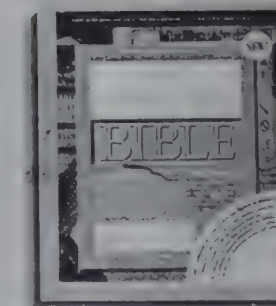


by Alan Simpson

HTML Publishing Bible

Many surfers want to take the next step — set up a Web site, begin publishing on the Web, create interactive, multimedia-ready Web sites, etc. Explains Web authoring with Java, HTML and Internet assistant, advanced features of Web page creation and how to open a business and promote the site. A comprehensive coverage on all aspects of Web publishing from a best selling author.

Pages: 800 • Price: Rs. 450 (w/CD) • Postage: Rs. 15

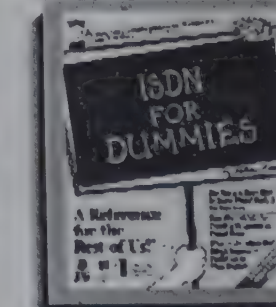


By Naba Barkakati

UNIX Web Master Bible

The ultimate guide for the Webmaster — everything from setting up a Web server to writing Web applications. This is the only book that addresses the needs of the Webmaster. Covers all major aspects of a Webmaster's job from setting up a Web server to writing applications in Java. Because most Web sites run on UNIX systems, this book showcases UNIX Internet tools.

Pages: 800 • Price: Rs. 450 (w/CD) • Postage: Rs. 15

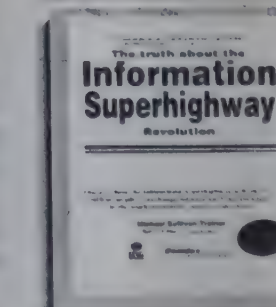


by David Angnell

ISDN For Dummies

This book guides readers through the ins and outs of ISDN in a humorous ribtickling fashion. Provides key information on how to get the most out of ISDN and its use in multitasking videoconferencing and telecommuting.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

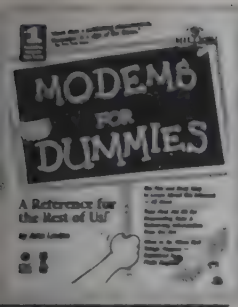


by Michael Sullivan-Trainor

The Truth About Information Superhighway Revolution

Information Superhighway will allow six billion people to exchange information from anywhere in the world. Find out when it's coming, in what form, and what it can do for you. Cut through the Internet hype to gain tangible, up-to-date information on the Information Superhighway.

Pages: 300 • Price: Rs. 99 • Postage: Rs. 10

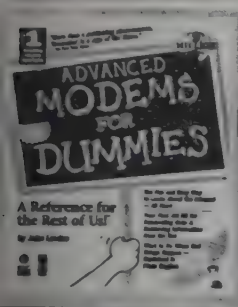


Tina Rathbone

Modems For Dummies

Modem-related information. Exclusive fax/modem coverage, including how to use the software. Discusses how to buy a modem, call local bulletin boards, get software tech support, and find information of Mosaic and other Internet user interfaces.

Pages: 500 • Price : Rs. 150 • Postage: Rs. 10

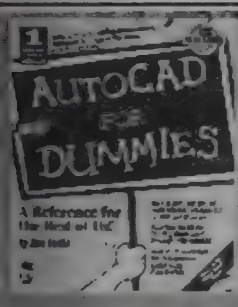


Tina Rathbone

Advanced Modems For Dummies

Modem-related information. This one is for Advanced users from what plugs into where to clever tips on cruising networks. Exclusive fax/modem coverage, including how to use the software. Discusses how to buy a modem, call local bulletin boards, get software tech support, and find information of Mosaic and other Internet user interfaces.

Pages: 500 • Price : Rs. 150 • Postage: Rs. 10

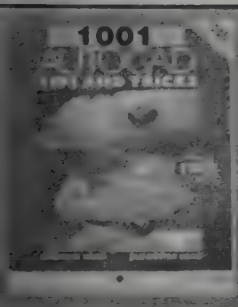


Bud Smith

AutoCAD For Dummies

An easy to follow guide for users who want to get up to speed quickly with the AutoCAD design program. Covers Rel. 12 & 13 and focuses on text and dimensions, drawing, editing and sharing data with other programs. Illustrations help demonstrate AutoCAD techniques.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

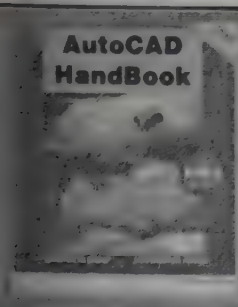


George O. Head

1001 AutoCAD Tips & Tricks

Why spend years discovering some of the simplest ways to save time with AutoCAD? Find 1,264 hints, techniques and shortcuts that will dramatically improve your productivity with AutoCAD. Completely updated and expanded for Release 12, it features: Drawing and editing tips, AutoLISP programs to speed up your work, 3D shortcuts and enhancements etc.

Pages: 600 • Price: Rs. 295 (with Disk)
• Postage: Rs. 15

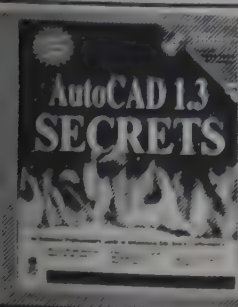


Ronald W. Leigh

AutoCAD Handbook

The definitive guide to all terms, skills and procedures required to use AutoCAD effectively. This book equips you with the knowledge needed to successfully work with this complex program. Explains every command and feature in Release 12, guiding you along the learning curve from simple to more challenging skills.

Pages: 500 • Price: Rs. 245 (with Disk)
• Postage: Rs. 10

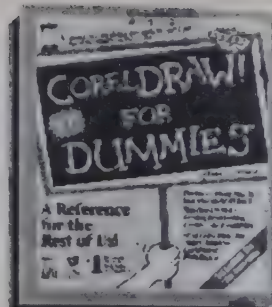


David Walsh

Auto CAD Secrets

Learn the little known tricks of the AutoCAD trade with AutoCAD Secrets. AutoCAD is a difficult program with many hidden tips, techniques and secrets. Features tips and advanced topics such as solid modeling, multiline text editing, dimensioning and 3-D shading. Shortcuts for the new drawing and design and drafting functions.

Pages: 800 • Price: Rs. 450 (with CD)
• Postage: Rs. 15

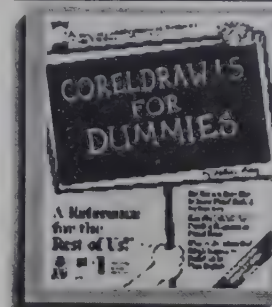


by Deke McClelland

CorelDraw! For Dummies

Comprehensive but quick coverage of most features, includes rich graphic programs. Learn designing documents, editing scanned photos and creating on-screen presentations. Provides ideas for special effects and discusses combining graphics from different modules with OLE technology. Covers ver. 3 & 4.

Pages: 400 • Price : Rs. 110 • Postage: Rs. 10

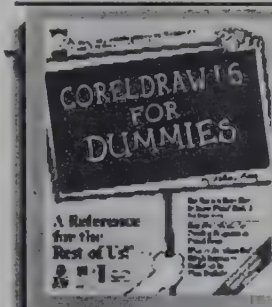


by Deke McClelland

CorelDraw! 5 For Dummies

This book simplifies CorelDraw 5 and teaches task-specific features in an entertaining manner. Discusses commands and techniques for designing documents, editing scanned photos, and creating on-screen presentations. Provides quick and easy ideas for sophisticated special effects.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

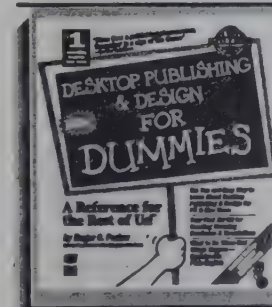


by Deke McClelland

CorelDraw! 6 For Dummies

Bestselling author leads novice designers through all features of latest version of CorelDraw for Windows 95. Covers DRAW!, PHOTO-PAINT!, CHART!, GRAPH! and MOVE!. Techniques for designing documents, editing scanned photos, and creating on screen presentations. Quick and easy ideas for sophisticated special effects.

Pages: 350 • Price : Rs. 150 • Postage: Rs. 10

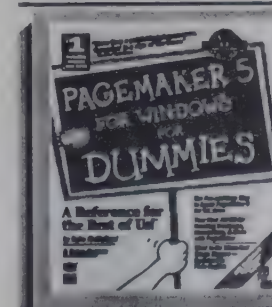


by Roger C. Parker

Desktop Publishing & Design For Dummies

Written for users of word processing and page layout software programs. Covers design essentials for PC and MAC platforms which anyone can master and use. Explains how to use DTP programs for more efficient document creation and also how to enhance art by retouching photographs and modifying clip art.

Pages: 400 • Price : Rs. 135 • Postage: Rs. 10

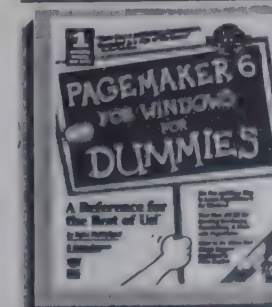


by Deke McClelland and Galen Gruman

PageMaker 5 for Windows For Dummies

The only book that specifically addresses the needs of new PageMaker users and is both readable & humorous. Teaches creating newsletters, signs, pamphlets, brochures, indents and lists. Explains font issues, tables and graphics in simple language.

Pages: 356 • Price : Rs. 135 • Postage: Rs. 10

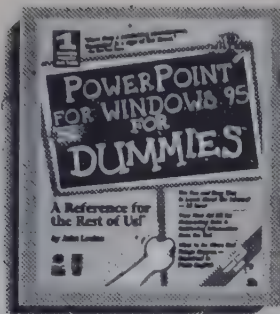


by Deke McClelland and Galen Gruman

PageMaker 6 for Windows For Dummies

This book covers the bestselling desktop publishing program in a way that everyone can clearly understand. Learn creating professional looking documents - whether a one page flyer or a 300 page computer manual. Covers version 5 and all the new features of version 6.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

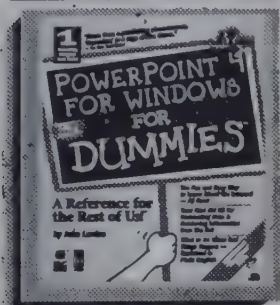


by Doug Love

PowerPoint 4 for Windows For Dummies

Enhances your presentation with impressive slides, transparencies, audience handouts, speaker notes, outlines, etc. Explains equation editor; word art & Org chart applets and provides tips & techniques for creating readable slides. Covers ver. 4.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

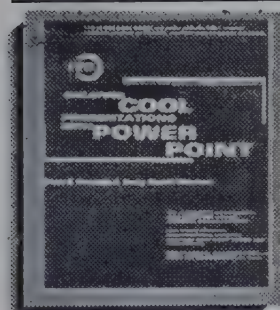


by John Koufeld

PowerPoint for Windows 95 For Dummies

This book is your ultimate guide to use PowerPoint for Windows 95 to create great professional looking presentations that stun audience with special effects while getting your central message sold. Discusses working with slide masters, templates and Autocontent wizard and dressing up your presentations.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

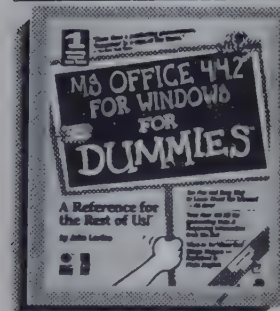


By Emily Weadock and Glenn Weadock

Creating Cool Presentations With PowerPoint

This book helps business people with no artistic background maximize PowerPoint's capabilities and helps them design informative, persuasive and impressive slide shows. More and more individuals are finding themselves in front of a crowd and needing help creating original presentations.

Pages: 350 • Price : Rs. 350 (w/CD) • Postage: Rs. 15

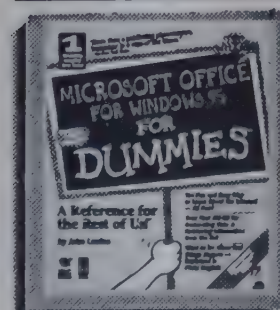


by Roger C Parker

MS Office 4/4.2 for Windows For Dummies

Get the power of Microsoft programs by learning the ins and outs of Word for Windows 6, Excel 5, PowerPoint 4, Access 2, and Microsoft Mail. Learn the most efficient way to work in each program and how to best share info between documents. Produce professional-looking documents and presentations.

Pages: 384 • Price : Rs. 135 • Postage: Rs. 10

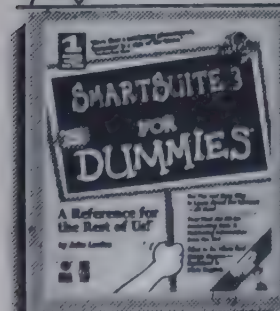


by Roger C Parker

Microsoft Office for Windows 95 For Dummies

Master the top selling programs included with Microsoft Office 95, and serves as First Aid Kit for sharing information between Word, Excel, PowerPoint, Access and Mail. Tips on the most efficient way to work in each program. Describes how to produce professional-looking documents and presentations.

Pages: 224 • Price : Rs. 150 • Postage: Rs. 10

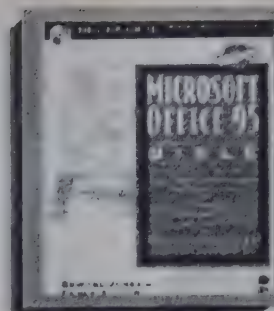


by Jan Weingarten

SmartSuite 3 For Dummies

Shows the user how to successfully shuttle data and graphs among various applications. Describes features in each application, including shortcuts and various tips and techniques for transferring data and tools amongst different applications. Includes entire section on integration along with integration tips.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10



by E. Jones and D. Sutton

Microsoft Office for Windows 95 (Professional Edition) Bible

This book uncovers the true potential of working with Microsoft's array of programs. Covers MS Mail, AutoFormat and Wizards. 'Basic' appendixes to help new users quickly run any of MS office applications and discusses tips and techniques to share data between applications.

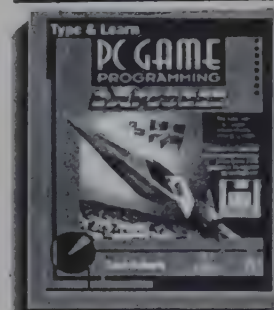
Pages: 1000 • Price : Rs. 325 (Book only)
Rs. 395 (with disk) • Rs. 450 (with CD-ROM)
• Postage: Rs. 15

by Ruth Maran

Microsoft Office 4.2 Simplified

This book guides you gently through the Microsoft Office features. Covering Word, Excel, Power Point and Mail features. It describes features in each application with shortcuts and various tips and techniques for transferring data and tools amongst different applications.

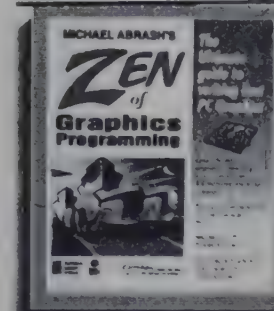
Pages: 400 • Price: Rs. 225 • Postage: Rs. 10



by Dave Roberts

Type & Learn PC Game Programming

The simplest way own video games on the PC. Reveals the essential techniques to make game programming easy & fun. Removes the mysteries in writing PC games by including fun step by step programming projects. Provides easy to use C/C++ source code and a complete game with info on how to extend it.

Big size Pages: 520 • Price : Rs. 295 (with disk)
• Postage: Rs. 15

by Michael Abrash

Zen of Graphics Programming

Complete guide to mastering the art of PC Graphics, from VGA hardware programming secrets to fast 3D-animation and texture mapping. Learn about the low-level machinery inside VGA including memory maps, color DACs, palettes, 256 color mode "X" and more.

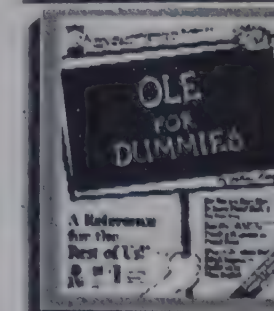
Big size Pages: 600 • Price : Rs. 325 (with disk)
• Postage: Rs. 15

by Diana Gruber

Professional Video Game Programming on PC

Create your own animation films and action games. Takes you inside the mysteries of writing action arcade games for PCs in C. In a floppy a powerful game engine with complete C source code, a visual game editor with source code, a fast action game and artwork for game levels and animated sprites.

Pages: 512 • Price : Rs. 295 (w/disk) • Postage: Rs. 15

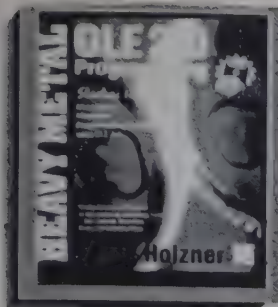


by Wallace Wang and John Mueller

OLE For Dummies

This fun and easy guide teaches you object linking and embedding skills (which help in improving functionality in applications) without getting hung up in C++ source code. Covers OLE requirement for graphics, spreadsheets, word processing and databases. Teaches using OLE to transfer and share information between applications in Windows.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

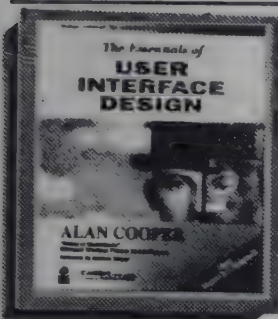


by Steve Holzner

Heavy Metal OLE 2.0 Programming

Gets to the core of OLE (Object Linking and Embedding) From what to do and what not to do this book tells you how to implement OLE. It also offers a review of Visual C++. The disk contains source code, working programs and OLE examples.

Pages: 600 • Price : Rs. 325 (with disk)
Postage: Rs. 15

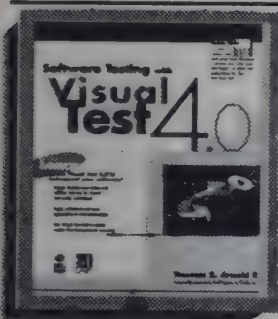


by Alan Cooper

The Essentials of User Interface Design

With an easy-going tone Alan Cooper presents a methodology of user interface design that he has distilled from many years of creating award-winning personal computer software. The book begins by discussing the way people interact with software, then spirals into focus on nitty gritty topics such as dialog box etiquette and fluent visual design.

Pages: 500 • Price: Rs. 225 • Postage: Rs. 10

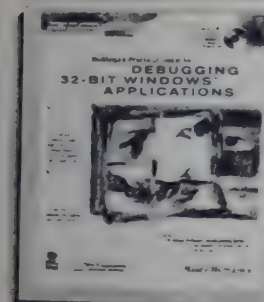


by Thomas Arnold

Software Testing with Visual Test 4

Visual Test is a tool that allows one to automate the testing of a product that runs under Windows 95 and Windows NT. Discusses when and where not to use Visual Test 4, the realities of putting together an automation suite and estimation of time necessary to automate a product, and much more.

Pages: 532 • Price: Rs. 325 (with disk)
• Postage: 15

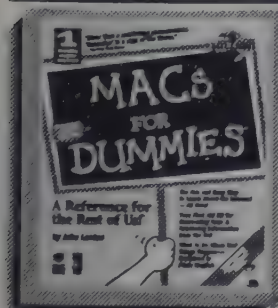


by Nicolaisen

Nu-Mega's Practical Guide to Debugging 32-bit Windows Applications

The industry's foremost authority on debugging & software development tools for the PC, reviews the most important debugging tools, techniques and problems that Windows programmers will encounter in the new world of 32-bit application development.

Pages: 500 • Price: Rs. 350 (with CD)
• Postage: 15

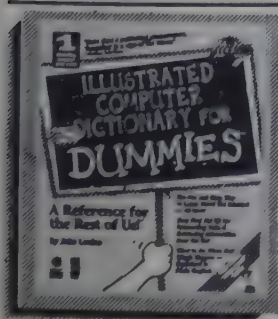


by David Pogue

Macs For Dummies

A friendly guide for learning how to use your Apple Macintosh! Covers latest models. Provides up-to-date System 7 coverage. Discusses files, folders, copying, trashing, backing up, shortcuts for working faster, and how to use PageMaker, QuarkXPress, FreeHand, etc.

Pages: 344 • Price : Rs. 95 • Postage: Rs. 8

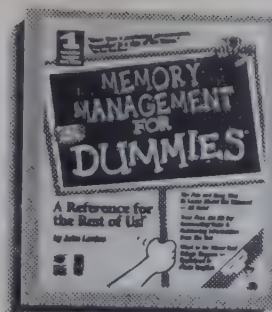


by Dan Gookin and Wallace Wang

Illustrated Computer Dictionary For Dummies

Over 200 illustrations that demystify even the most complex hardware and software system. Provides an alphabetical listing of over 1400 terms - their complete explanations with suggestions for proper usage and pronunciations.

Pages: 350 • Price : Rs. 68 • Postage: Rs. 15

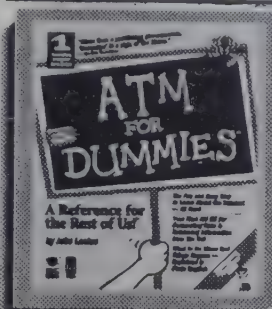


by Doug Lowe

Memory Management For Dummies (2nd Edition)

Crash course in computer Memory Management, gives a quick overview of computer memory and explains how the user can get most out of it. Covers memory essentials that allow users to shrink their data and expand storage capacities, provides tips & shortcuts to manage memory for DOS and Windows users.

Pages: 400 • Price : Rs. 150 • Postage: Rs. 10

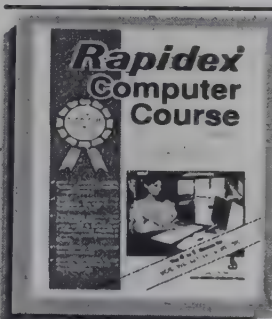


By Dummies Technology Press

ATM For Dummies

People who need to explore ATM will get everything they need in this book. It begins by describing this hot technology and why it's becoming more and more important to decision makers everywhere. It provides frank discussion about how ATM can affect their networks. Users will find out about ATM protocols and ATM products

Pages: 384 • Price : Rs. 150 • Postage: Rs. 10

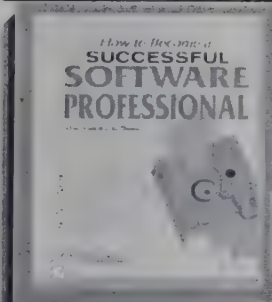


by Vikas Gupta

Rapidex Computer Course (4th Ed.)

A complete Step-by-step self learning computer course. It master you computers starting with the computer hardware fundamentals to some of the leading software in the industry today. With an extensive coverage on DOS, Word Star, Lotus and FoxPro/dBASE software. It comes with a tutorial disk which helps the reader gauge his progress through the chapters.

Pages: 512 • Price: Rs. 130 (Book only)
Rs. 149 (with Disk) • Postage: 10

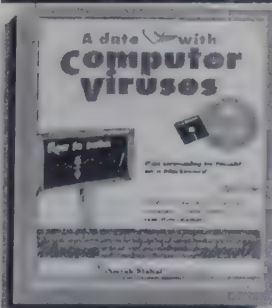


by Alexis Leon

How to Become a Successful Software Professional

Find real-life strategies for building a successful software career. It answers the most commonly asked questions about software profession, giving an insider's view of the software profession. Packed with practical, sure-shot tips and techniques.

Big size Pages: 220 • Price: Rs. 68 • Postage: 8

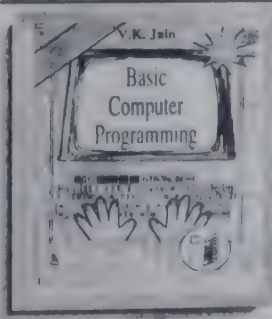


by Nitin Chandra

A Date with Computer Viruses

Educates the reader about computer viruses, the myths and the realities and provides a deeper understanding into the actual workings of a virus by developing a sample virus. Complete inside information on how computer viruses are created/ written, with comprehensive know-how to detect and remove them and how to write virus protection programs.

Pages: 250 • Price: Rs. 145 (w/Disk) • Postage: 10



by V.K. Jain

Basic Computer Programming

This revised and updated edition covers basic on IBM PC. Explains in detail the evaluation of computer; flow charts; how to start basic; all statements; programming applications; arrays; user defined functions; sub-routines; sequential files; etc. To evaluate the performance of the reader, exercises with answers are given at the end of each chapter.

Pages: 264 • Price: Rs. 48 • Postage: Rs. 8

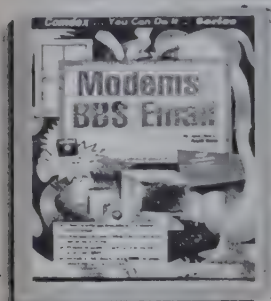


by V.K. Jain

Computer for Beginners

A complete guide to understanding the workings of computers. It is filled with special tips and tricks that first time users need to know about the world of computers. Starting with the basics it goes on to cover some of the more advanced techniques.

Pages: 192 • Price: Rs. 40 • Postage: Rs. 8

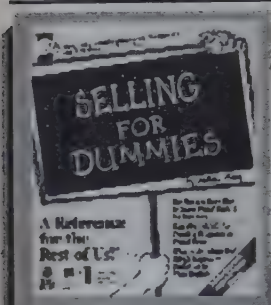


By Alok & Anjali Sinha

Modems / BBS / E-Mail

Gives you a Step-by-step guide to Modem installation and usage, setting up and maintaining your own BBS. Learn how to use E-Mail, Fax and Online services in India. A practical guide to set up and maintain your own BBS. Includes Modems and BBS troubleshooting tips and tricks.

Pages: 288 • Price: Rs. 199 (with Disk)
• Postage: Rs. 10

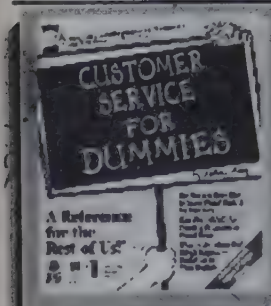


by Tom Hopkins

Selling For Dummies

It provides keys to 'selling' success from the basic to proven expert techniques that help readers learn quickly the art of selling ideas, concepts and products. This is the ideal guide for anyone interested in turning the word NO into a YES! Discusses how to get information, handle setbacks and rejection, give successful presentations and demonstrations.

Pages: 400 • Price: Rs. 110 • Postage: Rs. 10

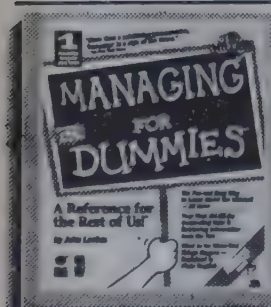


by Karen Dunn and Keith Bailey

Customer Service For Dummies

This fun easy-to-understand guide helps you achieve gold medal service at a bronze medal cost. Expert tips, proven techniques and suggestions for developing customer service. How to improve body language, tone of voice, telephone etiquette and turn adversity into a win-win situation. Includes various real world examples and case studies.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

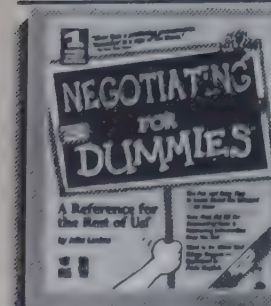


By Bob Nelson and Peter Economy

Managing For Dummies

Whether you've been a manager for years, or you were just recently promoted, the world of management can be frustrating, confusing and intimidating. With this book you will have the tools you need to effectively manage people, projects and teams in today's fast paced world.

Pages: 360 • Price: Rs. 120 • Postage: Rs. 10

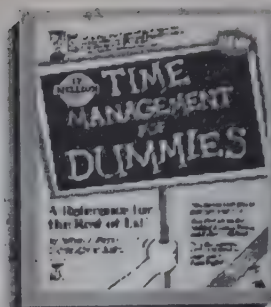


By Michael C. Donaldson & Mimi Donaldson

Negotiating For Dummies

Starting with the basics, it covers everything from how to prepare for a negotiation, how to establish and set limits and goals for a negotiation, and how to effectively negotiate on the telephone. A section is devoted for how to control speech, body language and gestures to gain the most favorable result.

Pages: 400 • Price: Rs. 150 • Postage: Rs. 10

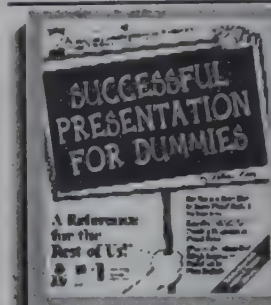


by Jeffrey J. Mayer

Time Management For Dummies

This book shows how to work smarter, improve your follow-up system, use personal organizers and personal information managers (PIMs), and how to maximize your business relationships. Keys to manage activities and net results by setting goals and objectives. Describes how to best use daily planner, computer program and telephone.

Pages: 400 • Price: Rs. 135 • Postage: Rs. 10

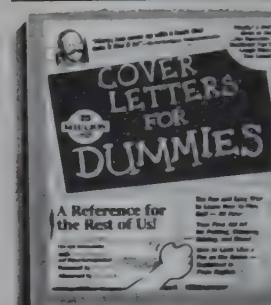


by Malcolm Kushner

Successful Presentations For Dummies

The fun and humorous guide for giving dazzling presentations. It outlines proven techniques and strategies for dealing with and influencing people and giving presentations. It starts with the basics that are needed even before getting in front of people. It explores the actual preparation for a presentation.

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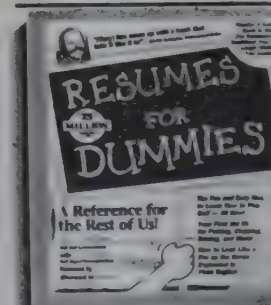


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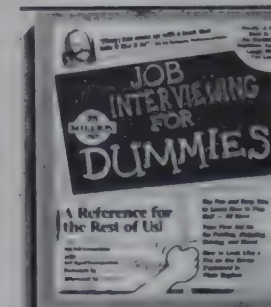


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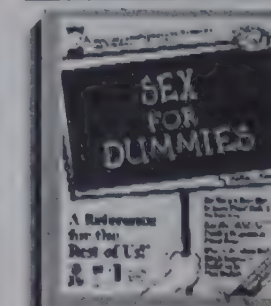


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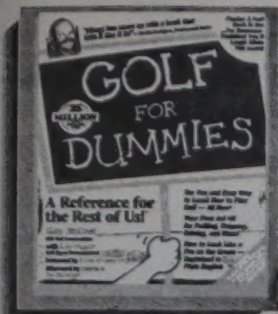


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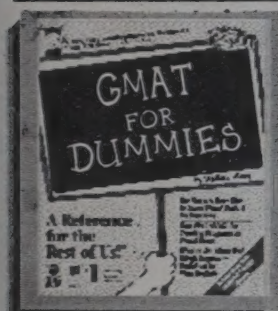


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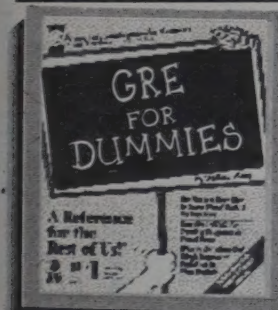


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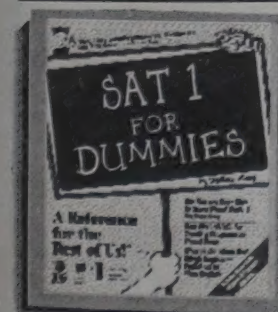


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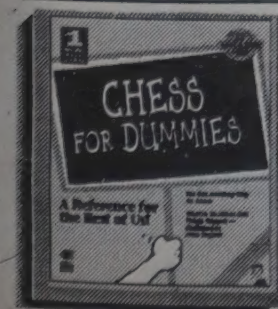


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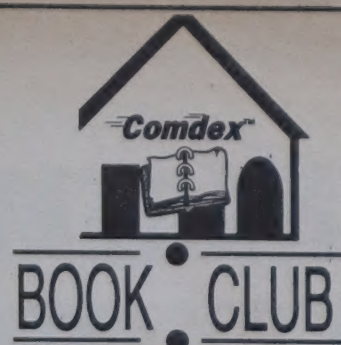


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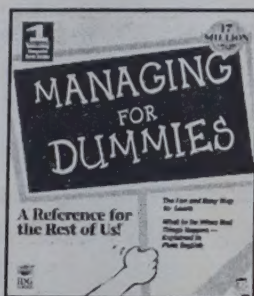
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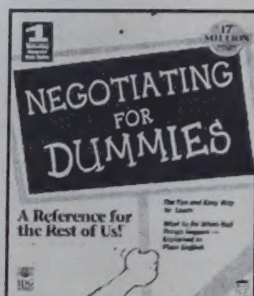
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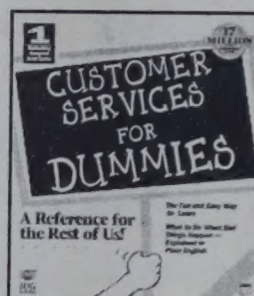
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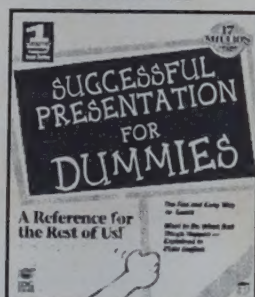
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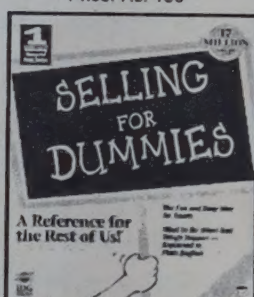
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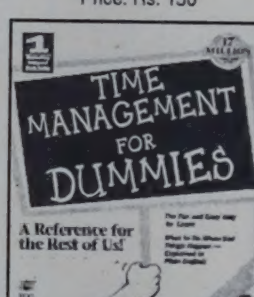
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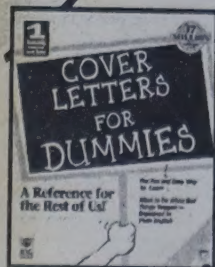
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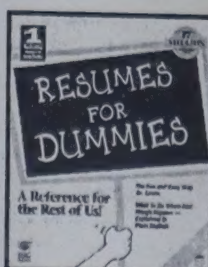
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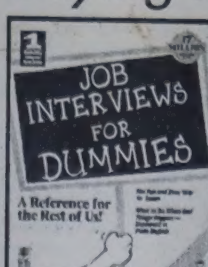
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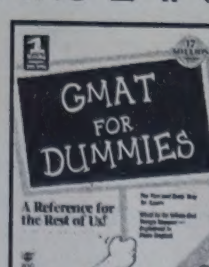
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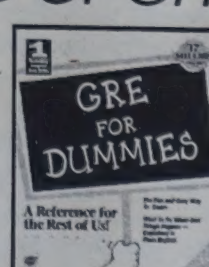
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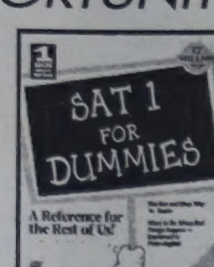
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